JOURNAL
OF THE
DEPARTMENT OF LETTERS

219.26

University of Calcutta

TPL
STOCK VERIF
1995

Journal

of the

Department of Letters

Vol. V

CALCUTTA UNIVERSITY PRESS
1921

PRINTED BY ATULCHANDRA BHATTACHARYYA,
AT THE CALCUTTA UNIVERSITY PRESS, SENATE HOUSE, CALCUTTA.

8
21·5

CONTENTS

PAGES.

1. Indo-Aryan Polity during the period of the Rig-Veda, by Prafullachandra Bose, M.A. 1-64
2. Aryanism and the Rig-Vedic Age, II, by H. Bruce Hannah 65-94
3. Aryanism and the Rig-Vedic Age, III, by H. Bruce Hannah 95-126
4. Aryanism and the Rig-Vedic Age, IV, by H. Bruce Hannah 127-166
5. The first Outlines of a Systematic Anthropology of Asia, by Prof. V. Giuffrida-Ruggeri, translated from Italian by Haranchandra Chakladar, M.A ... 167-276
6. Notes on Indian Astronomy by Dhirendranath Mukerjee, B.Sc. 277-302
7. Aryanism and the Rig-Vedic Age, V, by H. Bruce Hannah 303-348
8. Primitive Elements of Jainism by Prabodhchandra Bagchi, M.A. ... 349-364
9. Adwaitabad by Kokileswar Sastri, Vidyaratna, M.A. (in Bengali) ... 81-120

Indo-Aryan Polity during the period of the Rig Veda.[1]

BY

PRAFULLACHANDRA BOSE, M.A.

Professor of Economics, Holkar College, Indore.

INTRODUCTION

The object of this paper is to present a study of the Indo-Aryan organisation of political life and to relate it to the social organisation as well. A further attempt has been made to compare the different stages and institutions in the East with the corresponding stages and institutions in the West. The nature of the early Greek, Roman and Teutonic organisations has been so strikingly similar that the Science of Comparative Politics has been able to establish, almost beyond doubt, the growth of the elements in the Asiatic home of the Aryans before their march in the East and in the West.

The Polity of the Indo-Aryans, like that of the Aryan branches in the West, is very intimately connected with the institutions of family life. For this purpose it will be convenient to undertake a study of these before starting on a study of political institutions proper. But the Indo-Aryan family is not a new thing to the modern world. The Aryan family in its earliest stages has been the same everywhere, in Greece, in Rome as well as in India. It is not our intention to go through all the details of family life, because that would not be for our immediate purpose which is to study the political aspect of Vedic life. Moreover, the Vedic family has been already studied by many authorities, and we can conveniently collect those aspects only which bear on our purpose.

---

[1] Sir Asutosh Mookerjee Medal for 1920 was awarded for this essay.

CHAPTER I

Patriarchal Family

It is certain that the earliest Indo-Aryan family as revealed in the Rig Veda was of the patriarchal type. The head of the family was its ruler and the strict principle of agnation was adhered to, except perhaps in the admission of the Putrika Putra.[1] This theory of agnation was of course the product of the exclusive worship of the dead ancestors by the direct lineal descendants, all cognates being liable to offer worship to their lineal ascendants and therefore excluded.[2]

The family was not only patriarchal and based on agnation but it was undivided as well. The father and the Grihapati are separately mentioned, showing that the father was not necessarily the head of the family. His father or his elder brother would naturally be so. The joint family, therefore, must have been fairly big. This is also proved by the mention of numerous relations within the family folds which occur again and again in the Rig Veda, *viz.*, Jnati, Jami, Sajata, Sabandhu, etc. Moreover considering that in the earliest stages of the history of a nation, family is the only form of social association when the state has not grown, the disintegration of the family is less probable if the race wants to preserve its military skill and communal organisation. Both these are found in a very advanced state in the Rig Veda itself, so that from this side also the family can be proved to have been a big one.[1] To avoid traversing the same path which has been done by others, we shall here study only some of the institutions of the Aryan family which will help us to understand the polity.

---

[1] i, 124, 7; iii, 31, 1

[2] Abundantly proved by Fustel de Coulanges in his book called The Ancient City.

Gotra

The word Gotra as it occurs in the Rig Veda[2] has indeed been interpreted variously and, in view of the later use of the word to mean that family organisation corresponding to the Greek Phratry and Roman Cury, the attempt has not infrequently been to project the later idea into the passages occurring in the Rig Veda. The later meaning may have been a natural development but the original meaning was probably 'herd,' herd of cattle in particular. Wilson, however, translates it by clouds, which seems to be erroneous, the only relevant point being that Indra, in connection with whose name the word Gotra is always used in the Rig Veda, was associated with the clouds; but so was he associated with the release of the cattle of the Angirasas from Pani. The fact, however, is quite clear that in the Rig Veda we cannot, in any way whatsoever, associate Gotra with the special family organisation of a later age, and this in spite of the striking similarity of such a conception of the family among the ancient Greeks and Romans. Evidence thus from Indian sources is absolutely wanting for Fustel de Coulanges' theory[3] as to the development of ideas about the Phratry and the Cury institutions existing in their inception at least at a time when the Aryans were still undispersed. Or the counter theory must be put forth that the Indo-Aryans started from the original Asiatic home, wherever that might have been, at a time when these institutions had not developed sufficiently to leave any permanent traces upon the social institutions of the Aryan families. But we must be as cautious in accepting this theory of the Phratry and Cury as in rejecting it, since we argue from the negative point of view only, *viz.*, want of evidence in ancient Indian literature, which, we know, has not come down to us in any complete form. The denial involves the further difficulty of explaining the origin and growth of the Gotra as a clan organisation during the Brahmana period, and Brahmanas we know always assume that they are merely explaining the Samhitas.

---

[1] For similar condition of the Græco-Roman Society, see Coulanges' The Ancient City.

[2] i, 51, 3 : ii, 17, 1 ; x, 103. 7 ; etc.

[3] The Ancient City.

But though we cannot accept Gotra as a clan institution, that is, as a bond of relationship, we find ample evidence in the Rig Veda of two facts, *viz.*, kinship and the patriarchal type of family organisation. The latter is a peculiar type found universally in all the Aryan branches of the human race. Angirasa as the original ancestor who established the worship of fire (Agni) is referred to very frequently and is also deified in the later portions of the Rig Veda.

Kinship.

Similar forms of kinship may be explained as the result of the growth of similar institutions under similar conditions of life, the stage of civilisation being substantially the same among the earliest Greeks, Romans and Hindus. The backward condition in this respect of the other Aryan branch, the Teutons, is of course easily explained by their too long contact with and too much assimilation of the habits of barbarians.

Father.

Pitri is a common name for father. Some authorities derive it from the onomatopoetic syllable pa. If this theory is correct, then the formation of 'pitri' must have been reached in the original home of the Aryans, since we find 'pater' among the Romans as well. But if the word be derived from the Sanskrit root 'pa,' to protect, then its meaning becomes more consistent. Because whatever might have been the origin of the word, the fact remains that Pitri meant primarily protector in Sanskrit as well as in Latin and Greek, whereas fatherhood was conveyed by an entirely different word janitri in Sanskrit, genitor in Latin and gennetæ in Greek. So we see that the derivation of Pitri, pater, from root pa is very likely, but it is now hopeless to attempt to be positive for want of any materials bearing on the point.

The control of the father of the family (Grihapati)[1] over the members was carried in Greece and Rome to its logical extremes, and it required a series of revolutions before the bondage, for such it became, could be removed for giving free scope to the civic ideas that grew up with the later and wider conceptions connected with the gods of physical nature as they developed in the west.[2] In India we find no such revolution. The causes of this seem to be mainly three. The omnipotence of the father was never carried to any excesses which might naturally, as in the west, recoil on itself. Secondly, the gods of physical nature were assimilated at an early date to the religious beliefs; or more properly the predominance of them in the Vedic religion existed without shaking the foundations of ancestor worship. Finally, civic ideas as distinguished from those relating to family did not grow consistently in India and the earliest development of castes and classes smoothed the whole machinery by removing any possible ground for friction.

So, we see the son in the family subordinate to the father in all respects; but the proper functions of each already assigned and neither attempting to extend his own jurisdiction at the cost of the other. During the period of the Rig Veda, it was harmony on the whole and we do not come across any passage which deliberately attempts to disillusion us on the point. The limited scope of our enquiry does not permit us to go later than the Vedic period or, it might have been possible to prove that the early development of caste and classes mainly influenced the social structure of the Indo-Aryans. The later polity was particularly fortunate in being able to assimilate the organisation of the caste into the body politic—the village community of the Aryan race. The strength thus attained can be easily imagined from that of the post-Norman English polity when it was able, under William, the Henries and Edwards, to assimilate the clan organisation of the shires and hundreds as integral parts of the monarchical hegemony.[1] Thus only could England escape the decrepitude and inanition from which the mediæval European polity suffered so much, by assimilating strength and without dissipating energy in combating the clan institutions. Thus also, it seems probable, was the ancient Hindu polity saved and strengthened by assimilating the clan organisation into the later village community. Of the latter, however, traces there are even in the Vedic age, though not much in the Rig Veda Samhita.

---

[1] vi, 53, 2.

[2] Coulanges' The Ancient City.

---

[1] Jenks' Law and Politics in the Middle Ages, Ch. III.

CHAPTER II

CASTE AND CLASSES

The caste system in India is clearly recognised in the period of the Atharva Veda. Its origin is hopelessly lost or it grew so slowly that it was unnoticed in its inception. The Rig Veda of course recognises the Aryans as distinguished from the Dasyus, the non-Aryans, but further from this, it is not possible to assert with regard to the caste system in the Rig Veda. A later passage of the Rig Veda[1] speaks of the Brahmana, the Rajanya, the Vaishya and the Shudra, as issuing respectively out of the mouth, arms, thigh, and feet of Purusha. The distinction made here is curiously striking. It is practically the same as in the later Samhitas and the Brahmanas. But the inexplicable fact remains that it is the only passage in the Rig Veda and that too so short that it is not possible to attribute to it all the connotation that it involved later on. If the perception of Rishi Narayana was correct, he must have seen the future of the different classes very correctly and his classification or order of importance of each class has been only too correct. In any case unless this passage be regarded as an interpolation of which there is not much probability, this proves that the caste as it developed later on must have grown very slowly, almost imperceptibly and the observant Rishi of the Purusha-sukta was only recording the trend of events that were moulding the social structure. As the passage occurs late in the literature, it cannot be said to be representative of the earlier period, so that it would be erroneous to say that the division into castes, except into Aryan and Dasyu, formed any part of the social polity of the Rig Veda period of the Aryans (the arguments of Zimmer and Muir are too well known to be discussed here).

---

[1] x, 90, 12.

Kshatriya.

The word Kshatriya, however, occurs in many passages of the Rig Veda, its usual meaning being royal or of divine authority. As a class the Kshatriyas are recognised as warriors. In one passage[1] Agni is said to possess the Kshatriya quality of strength. Another use of the word[2] clearly recognises the military order, Trasadasyu having twofold empire. The word Kshatriya is most probably intended to convey the idea of a military caste in v. 69, 1, or, as Wilson says, it means possessed of strength, thus referring to Indra. Again Mitra and Varuna are invoked[3] as Kshatriyas, meaning, perhaps, sovereigns. These deities are elsewhere[4] described as sitting down for the office of sovereignty, as in another passage[5] Varuna is said to exercise supreme dominion (kshatra signified rule or dominion). The good government of a Kshatriya is spoken of in a later passage.[6]

In all the above passages the Kshatriyas are spoken of as the rulers, they being powerful and, as warriors, wielding kshatra or dominion. But there are certain other passages[7] in which the people (vis) also are said to fight, the last passage calling them godless. Most of these mean, perhaps, the vulgar folk rebelling against the higher and ruling classes, since protection of deities against them is sought. The reference to non-Aryans is not warranted, as in that case the fact would most probably have been specifically mentioned. The doubt that is cast upon the fighting habits of the people arises from the invocation[1] to Indra for protection against the people and protection in combats thus distinguishing clearly the people from wars. A remarkable sukta[2] comes towards the end of the Rig Veda, proving clearly the right of instituting sacrifices on the part of a Kshatriya. But experts consider the case of Devapi as exceptional. In any case this exception is curious, as by the time of the Rig Veda the priesthood as a hereditary class had already been consolidated. Another exception is Vishwamitra.[3]

---

[1] iv, 12, 3.

[2] iv. 42. 1.

[3] vii, 64. 2.

[4] viii, 25, 8.

[5] i. 25, 10.

[6] x, 109, 3.

[7] i. 69. 3, iv, 24. 4; vi. 26. 1; vii. 79. 2; viii, 96, 15.

Purohita was the domestic priest in a later age. In the Rig Veda two passages[4] occur, the first not necessarily meaning domestic priest since it refers to the two chief deity priests, Agni and Aditya. The second one explicitly refers to the most learned priests who take the foremost place. This evidently has its source in the institution of domestic priesthood which by this time must have been increasingly manifest.

The hereditary professional priesthood (communal) is seen practically from the very beginning of the Rig Veda period. Its position is entirely separate from that of the monarchy. The fact is somewhat puzzling in conception. A study of the earliest organisation of the other branches of the Aryan family reveals the fact that the original leader was the king, the priest and the head of the fighting host; and there is nothing to suppose that the particular branch that came to India began with a special polity or stepped lightly over some of the stages while retaining fully the wisdom derived from the experience of each. The latter fact is clear from the subsequent history of the race during which, in spite of the predominant influence of the priests (the Brahmans), there was no attempt on their part to become kings *de jure*, although they wielded, through their influence on the ruler, all the powers of the king. Any explanation, however, of this early separation of priesthood from kingship in India must be conjectural; there is no record previous to the Rig Veda and in the Rig Veda it is recognised as an established institution. Nor can it even be safely conjectured whether such a change took place in India or before the Aryan advent into India. But it seems only rational to say that the greatest probability should be attached to a change having been effected from the co-ordination of power in the one man to its separation into the priestly, military and monarchical. The denial of it would bring on the burden of proving that this one branch of the Aryan family, alone out of all others, began with a different system and yet ended with the same separation of powers. On the other hand, we cannot assert in favour of it inasmuch as it is advisable to recognise the full value of the historical fact that the social polity begins earlier than the political organisation and that the extent of development in the former was much greater in the original home of the Aryans than the latter.

---

[1] vi, 41, 5.

[2] x, 98.

[3] iii, 33, 8.

[4] x, 66, 13; x, 70,7

Brahmana.

Whatever may have been the exact course of development in the pre-Vedic age, the hereditary class, professional already, receiving dakshina[1] for thes ervices performed, existed in the Rig Veda period; and it will be interesting to learn from the various passages in the Rig Veda what was the position, qualification and function of the Brahmana, as the priest was called. It is necessary, in this connection, to emphasise that the position of the Brahmana was very high, next, if next at all, to the Kshatriya only. In the post-Vedic age he was undoubtedly the superior, standing above all others. But in the Rig Veda his position seems to be equalled at least by the Kshatriya; and this is quite natural in a society when it was fighting its way to the south and the east among a powerful alien population. But his position could not have been ignored even then, since he invoked the deities who were supposed to fight for the Aryans against the Dasyus.

---

[1] i, 168, 7; vi, 27, 8; viii, 24, 29; viii, 39, 5; x, 62, 1 : x, 10.

The first passage[1] in which the word Brahmana occurs seems literally to convey its etymological meaning. The four definite grades of speech (which have been variously interpreted) are known to the Brahmanas only, who are wise. Three of these are deposited in secret and indicate no meaning (*i.e.*, to the non-initiated or ordinary persons). The fourth is spoken by men. The Brahmanas[2] again are called the progenitors, presenters of the Soma, which gives a glimpse of their function at the sacrifice. Perhaps they are also called observers of truth (second half of the same sloka) and they are invoked for protection. So that this class of men was looked upon as a superior order of beings capable of some of the godly functions, perhaps supposed to have acquired them by their professional contact with the deity. The Brahmanas, in their performance of sacrificial rites, had to chant mantras, sometimes throughout the night as in the case of the Atiratra rite[3] or throughout the year, perenniel as it has been interpreted by some, perhaps during the sacrificial session, *Gavam Ayanam*.[4] They also practised penance throughout the year being observant of their vows.[5] Rishi Vashistha's hymn on frogs is very illuminating as is shown above. They are described as worshippers who effuse Soma[6] and Soma is supposed to pervade the Brahmanas.[7] The Brahmanas are the friends of the Vedas[8] "wandering at will in the meanings of the Veda." They are called learned because they possess the investigated Brahma consisting of knowledge, Shruti or divine lore, and thought and wisdom. There is, it seems, a good deal of contempt for the ordinary people, ploughmen, who pursue agriculture. The contact with the Brahmanas in this lower world as of God in the upper is a necessity to become a Brahman or an offerer of libations[1] which function seems to be obligatory on all respectable householders. The Brahmanas are inferior to gods, sitting down to perform the work of the Hotri and support the ceremony approaching the sacrifice.[2] In the Purusha Sukta[3] whose Rishi is Narayana, mouth of Purusha became the Brahmana, which means that the latter was derived or born out of the former. This sloka, as has been mentioned previously, is important in connection with the caste organisation. This separate original birth is the foundation of the hereditary character of the Indian caste. The Brahmanas, it seems from a later passage,[4] were in the habit of administering plants as medicines.

---

[1] i, 164, 45.

[2] vi, 75, 10.

[3] vii, 103, 7.

[4] vii, 103, 8,

[5] vii, 103, 1.

[6] ix, 112, 1.

[7] x, 26, 6.

[8] x, 71, 8.

Other castes.

The Rajanya, the Vaishya and the Shudra as different castes appear, as has been pointed out, in the last Mandala[5] of the Rig Veda.

In later Samhitas and particularly in the Brahmanas, we find reference to some classes, called the outcastes, who could not be touched or with whom it would be derogatory to eat. But Chandala and Paulkasa do not even occur anywhere in the Rig Veda. Vrishala occurs indeed in the Rig Veda[6] and most probably means an outcaste. But the Vrishala here is not a class name but a general term conveying the idea of degradation attached to the irresponsible and wicked gamester of the hymn.

---

[1] x, 71, 9.

[2] x, 88, 19.

[3] x, 90, 12.

[4] x, 97. 22-

[5] x, 90, 12.

[6] x, 34, 11.

It is very uncertain whether tenants as a class existed in the time of the Rig Veda. The word Vesa occurs in two passages[1] but its meaning is obscure and for want of further evidence it is impossible to posit their existence as a class, although their existence might have been probable in scattered and individual isolation.

Physicians.

Physicians are widely recognised in the Rig Veda, though it is not clear whether there was any such class as in later days. They must have been held in very high respect since many gods Ashwins,[2] Varuna[3] and Rudra[4] are frequently called physicians. In a later passage[5] the Brahmanas are also said to administer plants with healing effect.

STATE CENTRAL LIBRARY
THIRUVANANTHAPURAM
KERALA

---

[1] ii, 13, 8; x, 49, 5.

[2] i, 116, 16; i, 157, 6; viii, 18, 8; viii, 86, 1; x, 39, 3-5.

[3] i, 24, 9.

[4] ii, 33, 4-7; vi, 50, 7; ix, 112, 1.

[5] x, 97, 22.

CHAPTER III

THE VILLAGE COMMUNITY

Turning to the settlement of the families on land we find that the Vedic Aryan lived in villages (Grama). Whether these villages were close to each other or were scattered far and wide and, if so, whether there were roads to connect them cannot be ascertained from the Rig Veda. But the universal practice of certain religious rites and the substantial unity in the development of Vedic life point to the probability that they used to live either close to one other or had means to go from one place to another. The universal habit of early migrations along the course of a river as in the case of the ancient Teutons along the Elbe and in the case of the modern Swiss people can be applied to the Indo-Aryans. They might have gone along the five rivers of the Punjab and there is evidence to support that they reached Sindh and knew the ocean[1]; we also meet with reference to the treasures of the sea.[2] The story of Bhujyu, son of Tugra, is repeatedly mentioned in the Rig Veda. This colonisation along the rivers facilitated communication from village to village, and, from analogy in colonisation, we can easily imagine that for fear of being lost to the brother families the Vedic Aryan used to settle by the side of the river; just as the early settlers in Australia colonised along the coast only, those of North Canada along the rivers only. There is additional ground to suppose in the case of Vedic Aryans that they did not go to the interior. The non-Aryans were a powerful race and the frequent hymns of victories and prayers for protection against the Dasyus clearly prove that they were harassed by the latter. In such a case there was the least likelihood of their going in the interior to settle and breaking off all connection with the main settling places along the river.

---

[1] vii, 95, 2.

[2] i, 47, 6; vii, 6, 7; ix, 97, 44.

There was easy communication[1] between the settlements along the different rivers of the Punjab. Later on, of course with the pressure of population, they had to move to the east and south-east but then they did not start in scattered groups but formed continuous or at least connecting villages; where these were impossible owing to geographical features, they might have constructed roads to connect one village with another. All this expansion must have been after the period of the Rig Veda. And we do actually find reference to roads in the Chhandogya Upanishad.[2]

The existence of villages is beyond all doubt even in the Rig Veda period. The resplendent Agni is invoked as the protector of the people in villages.[3] The mighty Rudra is propitiated in another sloka[4] in order that all things in the village may be well nourished, and exempt from disease. The village is also referred to in various other passages in the Rig Veda.[5] The domestic animals also lived within the village. Of this the proof is clear. Cattle are spoken of as hastening to the village.[6] Vayu[7] or Instinct[8] is said to preside over certain animals and the rest are recognised as divided into those that are wild and those that are tame.[9]

---

[1] iii, 33.

[2] viii, 6, 2.

[3] i, 44, 10.

[4] i, 114, 1.

[5] x, 146, 1; x, 149, 4

[6] x, 149, 4.

[7] According to Wilson.

[8] According to Colebrooke.

[9] x, 90, 8.

The organisation of the village is very little known. But there was a village headman with scanty reference to his functions. He is called Gramani or leader of the grama. He is said to be the donor of a thousand cows and the prayer is that he, called the Manu, may never suffer wrong and may his liberality go spreading in glory with the Sun.[1] In this hymn of Rishi Nabhanedhishtha the liberality of Raja Savarani is the subject; thus the leader seems to be identical in this case, at least, with the headman of the village. In another passage[2] the head of the village goes in front (at the sacrifice) bearing the dakshina of the priest. From this the communal character of some at least of the religious institutions is suggested and in these the headman represented the village. Moreover, this passage nullifies Zimmer's attempt to confine the functions of the Gramani to military ones only. In the days of the Brahmanas he seems to have occupied the same post in the village as the sheriff in the shire before Henry II, discharging both the civil and military functions. The actual working out of this system of village life and its relation to the broader life of the kingdom, so far as these can be discovered from the Rig Veda, will more properly come under the heading of Polity.

---

[1] x, 62, 11.

[2] x, 107, 5.

CHAPTER IV

FAMILY OWNERSHIP OF LAND

Family ownership.

Family ownership of land has been the subject of great discussion, but whatever may be the later development, there is no trace of it in the Rig Veda. Baden Powell[1] thinks that it is of later growth and that even then there was no community of ownership in the village but only ownership of the head of the family who had merely moral obligations to the other members. This, he explains, by the growth of *patria potestas* in post-Vedic India. The word Daya in Hindu Law clearly means inheritance and it occurs even in the Rig Veda,[2] but there it means only reward. But that they had property in some form is certain, for example we find mention of a father's property being divided by the sons in his old age.[3] But these most probably referred to moveables. There is no trace of the family as a land-owning corporation,[4] so that its growth later must have been post-Vedic. In fact the general impression from the Rig Veda is that the property of the family was not the property of the family but of the father. As to the exact nature of such property, we shall have occasion to deal with that later on.

It is equally uncertain whether women could hold any property for themselves. There is one obscure passage in III, 31, 5-7. The other passage[5] in the Rig Veda may be interpreted to refer to the property of men rather than that of their wives.

---

[1] Indian Village Community.

[2] x, 114, 10

[3] i, 70, 10.

[4] Baden Powell: Indian Village Community.

[5] x, 34, 11.

CHAPTER V

ECONOMIC CONCEPTS

Concepts are always generalised terms and often abstractions. We should not, therefore, expect many of them in the earliest literature of any race. The Greeks and Romans had currency reforms but not much of economic abstractions during the early periods of their history. Later Greeks were famous for philosophic concepts and we find a few economic ones in Aristotle's Politics. The Teutons had none at all while on the Continent, or, if they had, Cæsar and Tacitus failed to notice them. But with the growth of wide economic activity concepts naturally grow. These, when found, are the surest and the truest guide to the economic achievement of a nation, since these invariably follow and never precede economic evolution.

Wealth.

Let us now look at the wealth of the ancient Aryans and study their conception of it. The general term for wealth is Rayi.[1] The usual prayer to the gods is for wealth. Rayi must have included all valuable things, the possession of which would advance the material interests of the early men.[2] Ribhus are asked to give that wealth which they possess This is said to consist of cattle, food, progeny, dwellings, and abundant sustenance.[3] Men glorify Indra, the lord of riches, for the sake of obtaining sons, valiant grandsons and rain.[4] Indra is propitiated so that the devotees may obtain that wealth which comprises cattle, horses, and food,[5] these being the most important and most valuable possessions. There are also special uses of the word rayi standing for valuable things. This is helpful in understanding the things which were considered to be exceptionally valuable and therefore might be identified with rayi itself. Vira or hero is one of them Vira of course standing for a son who is valiant, otherwise the prayer in general terms for a hero would be meaningless. Indra is asked to give desirous wealth, the source of great power and of numerous progeny.[1] The Maruts are propitiated so that the praisers may thereby daily enjoy the distinguished affluence consisting of valiant progeny.[2] The Dawns are prayed to for wealth, comprehending progeny.[3] Horses were included in wealth, and as these formed one of the most important assets in war and in religious ceremonies, they are frequently spoken of specially as wealth or rayi. The Maruts are asked to bring wealth comprising horses.[4] Cattle and food have been too frequently mentioned as rayi. Thus the wealth of the early Aryans consisted of progeny without which the domestic worship and the integrity of the family would be endangered. It consisted of horses without which it would be impossible to carry on war and all aggressions and defence against the non-Aryans. Cattle were also recognised as wealth, for without it the main industry, agriculture, would be difficult, and sustenance of life would be hopelessly reduced. Finally, food was included, by which of course they understood agricultural products mainly, because without this the very foundation of the social structure, the settlement on the Indian soil, would be destroyed. Thus it is true indeed that the conception of wealth is the index of the state of the society. The Aryans had gold, jewels, and ornaments, but these are not specifically mentioned as wealth. This fact would, apart from all other proofs, go to show that the system of exchange was not prevalent to any large extent, so that conversion of stock was not contemplated in the computation of one's wealth, and that the aggregate stock of the most useful things was recognised as such. This is so, not because gold was, volume for volume, less valued than cattle or horses or food, but because gold could not, in times of stress, satisfy those immediate needs of food and protection which, in a primitive race, naturally loomed large owing to the lack of what Marshall would call the "telescopic faculty" of the mind in looking to, and making provisions for, the future.

---

[1] i, 73, 1; ii, 21, 6; iii, 1, 19; iv, 36, 9.

[2] v, 4, 11.

[3] iv. 34, 10.

[4] vi, 31. 1.

[5] viii, 6, 9.

---

[1] ii, 11, 13

[2] ii, 30, 11.

[3] iv, 1, 10.

[4] v, 41, 5.

Private property.

In India besides cattle, progeny, horses and food there was another element which must be recognised as important. This is the right to land. The idea of private property is the last thing that a people develop, because it is directly the outcome of a series of abstract ideas. First there must be the idea of possession. It must be based on the conception of some abstract right based on prescription, which would condemn any intruder who comes in by the same right to squat and appropriate as the original man. This possession would thus develop into and confirm ownership. This is too much for a community which is just emerging out of a nomadic state and which, in the beginning, finds ample land for appropriation without any occasion for dispute. In Greece and Rome this conception of ownership of land developed very early. But that is due to the peculiar beliefs of their religion which dominated their whole being. Ancestors had to be worshipped separately because they could not accept libations at the hands of one who was not of their blood. His presence would disturb their rest. Thus the family worships were separated from one another. The tombs also had, for the same reasons, been separated at an early stage. This spirit of exclusion naturally led to the belief that the family tomb must be well defined and be possessed by the family only. Thus one was excluded from the others. So that in Greece and Rome all the intervening stages of abstract theory of rights and possession were stepped over by their peculiar religious beliefs. This is further confirmed by the fact that, whereas the regular independent growth of ownership, being based on the individual's rights to the property, makes it disposable at his will, the ancient Græco-Roman property belonging to the family gods on whose behalf the family or its representative, the pater, was merely the trustee, was inalienable and indivisible; paters came and went but the corporation, the family including the dead ancestors, the living members and those who would be born or adopted into it, remained intact. Destruction of the family only would lead to the alienation of its land.

Among the Teutons, on the contrary, this religious belief did not prevail. They, in their settlement on land, held it as belonging equally to all the social units which were families. They did not and could not consider a displacement from a settlement as sacrilegious, the only resentment was that which arose out of defeat. In all Teutonic settlements the communal 'mark' was the basis of the organisation of the village community. The land was theoretically shared by all with a tripartite division into culturable land, meadow land and waste; but no family could point to any particular plot of land which belonged to it permanently. It had only a share, the strips being distributed anew every year. In such circumstances the rights of ownership, in the case of Teutons, of the family, could not develop so long as the pressure of population and improvements in agriculture did not bring in intensive culture of the soil. With intensive culture it would be discovered that an annual redistribution of strips would lead to the abandonment by the cultivating family of whatever improvements it might have made in the land. Therefore self-interest would generate solicitation for the same piece of land. Thus family ownership of land was established in Britain. But they had not as yet reached the further stage of individual ownership. This was not an indigenous growth but a foreign engrafting. The Normans brought the feudal idea of individual ownership and William made it subordinate to the ultimate authority of the king. The work was not difficult of achievement since Roman and Continental ideas were already remoulding English society and English institutions through the preaching of the Christian Church.

In India conditions were different. The elements of religious beliefs with which the Aryans separated from the Asiatic home were worship of the dead ancestors and worship of the gods of physical forces. The influence of the new environment wrought its work and brought about, in the earliest stages, the predominance of the former in Greece and Rome and of the latter in India. Indra and Agni, Varuna, the Maruts, Ushas, the Ashwins, and all the Vishwadevas were deities presiding over some natural phenomena. It is not within our scope to trace this development in the changed environment. But we recognise the fact as established in the Rig Veda itself. The bifurcation of the original religion seems to have been complete. Most of the illustrations drawn by Fustel de Coulanges[1] from India in his comparisons of Græco-Roman and Indian institutions are drawn from the Laws of Manu, a much later work in India. Latter-day India did develop her religion of ancestor worship ; that was in the Pauranic age; but in the Rig Veda Angirasas and the pitris are not gods of the first rank.

---

[1] The Ancient City.

Thus it is clear that the peculiar religious beliefs of the Aryans which developed exceptionally in Greece and Rome and which, by their ideas of exclusiveness, brought on the institution of private property in land, were not the cause of private property in India. Nor can we say that anything like the Norman invasion and Christian Church accelerated the growth of private ownership of land in India as they did in Teutonic Britain. To what then is this early growth of private property due? The explanation must be more or less a theory since we cannot corroborate it by referring to any texts previous to the Rig Veda, and in the Rig Veda private property is so easily accepted that it shows only the earlier establishment of the institution in all its completeness. Yet we think the only reasonable and probable explanation lies in economic causes. If the Malthusian principle of population be combined with the Ricardian principle of intensive cultivation of the soil, the same results would follow as in India. The Aryans in India found a soil which was more fertile and less trying for them to live in. The extreme cold was not there nor were there present the enervating effects which are said to be the curse of India south of the Punjab. The first settlement was effected by extirpating or displacing the non-Aryans. The land fell to the Aryans. The cultivation yielded fruits beyond all their previous experience. The spirit of adventure, which is the backbone of a conquering race, combined with abundance of food and a bracing climate, would give the greatest impetus to multiplication of the race. None of the Malthusian checks, either positive or preventive, except war, could have prevailed at that time. The fertile soil gave produce in abundance, so much so that its limits could never have been reached, at that early stage, by the increase of population. All these causes would combine to accelerate the growth of population. The fecundity of a race grows and becomes part of it, just as any other social or moral characteristic. Thus the Aryans began to grow in number. At the same time they were limited, as to further territorial expansion, on all sides by the mountains, the sea or the non-Aryans who were an active people. The capacity to multiply grew, whereas the extent of the territory could not be so increased. So, in time there was felt the pressure of population; and the people had to take recourse to less fertile lands and to the intensive culture of the soil. With time this pressure increased continuously, leading to adventures by sea and further expansion towards the south. It will be interesting to remember that exactly the same conditions led to the Teutonic difficulties in Germany when, being hemmed in by the powerful Roman armies on the south and the west, the Teutons had to force their way into the sea and settle in Norway, England and Iceland. In India the Aryan culture of the time of the Rig Veda was much superior to that of the Teutons in Frisia. The arts and crafts, the methods of agriculture and warfare, the construction of the chariot, the bow and arrow, and houses, all point to this. Simultaneously they point to something else. Agriculture or house building could not have developed so much during the nomadic state nor could the arts of navigation be developed without a sea. The assumption is irresistible that the Aryans had lived in India for a considerable period before the composition of the Vedic hymns. If so, that confirms our theory of private property. Originally there was no economic pressure of population and no need of intensive culture. But with time this grew, and with intensive culture the ownership of land was gradually evolved. The rapidity of development along this line would exactly correspond to the severity of the pressure of population within, and that of the non-Aryans without, the Aryan settlement. It was only intensified by the development in agriculture failing to keep pace with the tremendous increase of population. To economise the energy of the race and to give it stimulus, the land had to be made the subject of private property, so that the certainty of effects would lead to the greatest improvements of agriculture that were possible with the known methods. Of course all these arguments did not appear to them. They were impelled by economic needs and adapted themselves to the changing environment. In doing so they gradually slipped from the state of communal ownership, if ownership at all was there, to the state of family ownership, or, more properly, as we have already shown under Village Community, to that of individual ownership, the head of the family being the real owner. This process of disintegration with respect to the ownership of land must have had its reflex on other social ideas. Thus we find the son not a slave of the father, as in Greece and Rome, where he could be sold and where, in the beginning, he could hold no separate property. In the Rig Veda we cannot discover a single passage which would relegate to the son such a disreputable condition. Yet the Græco-Roman idea of the necessity of the son for the continuance of the family was maintained. The son's position thus was much better here than in the west. In all this we find traces of the working of the idea of ownership dissolving into many and attaching to the individual.

In such a state of society the land, the property, would be recognised as part of the wealth of the individual. We have abundant evidence of this in the Rig Veda. Reknas meant inherited property or property in general; and it occurs many times in the Rig Veda.[1]

---

[1] i, 31, 14; i, 121, 5; i, 158, 1; i, 162, 2; vi, 20, 7; vii, 4, 7; vii, 40, 2.

CHAPTER VI

POLITY

The polity of the Indo-Aryans, like their family, is not a new thing to the modern world. As already noticed, the nature of the ancient Greek, Roman and Teutonic organisations has been so strikingly similar that the science of Comparative Politics has been able to establish, almost beyond doubt, the growth of the elements in the Asiatic home of the Aryans. We have already seen that the Kshatriya or the fighting class had grown in the period of the Rig Veda. Its position was very high indeed, and as we shall presently see its occupation was pretty hard. The Brahmanas, as a priestly class, also came to be differentiated. There may have been exceptions but that does not vitiate the main theory. Purohitas were mainly recruited from their class, so that national or domestic, the Aryan had already confided his spiritual progress to the keeping of the Brahmanas. In other words, mediation was the first, as mediation is the last word of Hindu spiritual growth so far as that is to be attained through the formal rites enjoined by the Shastras. The position cannot, indeed, be properly contemplated from the modern viewpoint of philosophic abstraction. The Brahmanas, as their name implies, were in reality the depository of the knowledge of Brahma. It would be contradictory to historical science to say, as has been suggested by some very high authorities, that the whole institution originated in, or was based upon, an attempt on the part of the Brahman oligarchy to capture the highest posts of authority in social life by enslaving, and appealing to, the spiritual aspect—the most easily moved one—of human life.

Vis.

The third class was the agricultural people, practically the whole population being included under this. Of course there are passages in the Rig Veda[1] where it is doubtful what exactly is the idea conveyed by the word Vis. The most consistent meaning can be gathered only by interpreting it as settlement or dwelling. This also would be the etymological meaning. It may have been an aftergrowth or it may have been a simultaneous use of the term, but it has been used[2] for subjects of the king. In another passage[3] the subjects willingly pay homage to the prince. Mention is made of subjects choosing a king and yet they are spoken of as smitten with fear.[4] Indra is propitiated in another passage[5] to render the subject people payer of taxes. Elsewhere the same word has been used for people in general.[6] In all these cases, it may be noted, Vis signifies the people, either general or as subjects, but not a settlement. The word has again been used in connection with the Arya people.[7] In an obscure passage[8] it seems to mean people in conjunction with the divine. With Dasa the word is similarly used.[9] A significant use of the word is found in the Rig Veda[10] where it means people and is clearly differentiated from all men (Jana), as well as sons, kinsmen and descendants. The opponents of the clan theory have discovered in this the demolition of the theory inasmuch as in that case Vis would have included descendants. The adherents of the theory equally urge that the distinction between Jana, the common people, and Vis, one's own people, contains the germ of the theory, Vis being all of the same gotra or clan. Sometimes it seems, among those obsessed with a theory, that the less the materials to be drawn upon the greater is the vigour with which their cause is urged. Even the brilliant Fustel de Coulanges[1] has not been able to escape from this defect. The fact in connection with our point is that from this single passage it is not at all possible to argue either for or against the theory of clan. The above passage read with another[2] as meagre as itself has furnished a second series of arguments in favour of the theory. A battle cry is mentioned here as *Visam-Visam*. This is interpreted to signify that the army was divided into hosts after the different clans. It is not at all improbable but we are bound to say that, when we do so, we traverse by imagination and not by proved historical fact. Additional colour is lent to this theory by another reference[3] to battle as Visoyndhmah. It is evident that the whole argument, either in favour of the theory or against it, hangs upon the exact meaning of Vis, which has so many significations that it seems hopeless to attempt to bring them out with any degree of certainty. Finally, there is another use of Vis[4] where it is contrasted with both Griha (house) and Jana (all men). The only point that stands out clearly in the midst of all these divergent meanings of the word is that there was the bulk of the people, mostly agricultural, who were never confused with, and were, therefore, distinct from, the Kshatriya and the Brahmana.

---

[1] iv, 4, 3; iv, 37, 1; v, 3, 5; vi, 21, 4; vi, 48, 8; vii, 56, 22; vii, 61, 3; vii, 70, 3; vii, 104, 18; x, 91, 2.

[2] *E.g.*, in vi, 8, 4.

[3] iv, 50, 8.

[4] x, 124, 8.

[5] x, 173, 6.

[6] *E.g.*, vi, 1, 8; vi, 26, 1; viii, 71, 11.

[7] x, 11, 4.

[8] iii, 34, 2.

[9] iv, 28, 4; vi, 25, 2.

[10] ii, 26, 3.

Slaves

There was, moreover, another class of people, the slaves, whose position, as gathered from the later Samhitas, was similar to that of the serfs in England just after the Norman conquest. Dasa is used for the non-Aryans as also Dasyu. But Dasa equally refers to slaves who were under the control of the Aryans. The fact, perhaps, is that some of the conquered people were slain, others not exactly conquered were allowed to live independently while the prisoners of war who escaped death were converted into slaves. In a very early passage[1] the deity is asked to give, among other things, troops of slaves. This would not be a boon but a curse if it is interpreted to mean a body hostile to the Aryan. The worshipper in another passage[2] alludes to diligent service like a slave. Dasa as slave is referred to again in the eighth Mandala.[3] The possession of slaves is compared to that of numerous cattle, they being liable to be given away for the enjoyment of the donee.[4]

---

[1] The Ancient City; the Origin of Property in Land.

[2] x, 84, 4.

[3] iv, 24, 4.

[4] x, 91, 2.

These then are the different classes who were recognised within the pale of Aryan polity. The King and the royal household will be treated separately. But before that we should know something about the mass of non-Aryans who are called Dasa or Dasyu. A series of questions naturally arises as to their historic position, the principal points of their difference from the Aryans, their organisation and mode of life, their wealth and their civilisation.

The non-Aryans.

These aborigines are repeatedly referred to in the Rig Veda either as Dasyu or as Dasa. There are other meanings of these two words, but we shall take only those passages where the words mean non-Aryans or aborigines. The earliest reference in the Rig Veda alludes to the Dasyus as contrasted with the Aryas.[5] Indra again attacks and slays with his thunderbolt the Dasyus and the Simyus.[6] That the

---

[1] i, 92, 8.
[2] vii, 86, 7.
[3] 56, 3.
[4] ix, 62, 10.
[5] i, 51, 8.
[6] i, 100, 18.

Dasyus and the Simyus were not Aryans is certain, but the doubt remains whether Dasyus and Simyus refer to different classes among the aborigines. This cannot, at this distant date, be ascertained. The next passage[1] on the point speaks of the thunderbolt armed with which Indra goes on destroying the cities of the Dasyus, *dásih purah*. This reference to their cities is significant. This shows that the Dasyus were not uncivilised altogether, but lived in organised bands and settled on territories perhaps of their own clearing. Even if purah be used for villages or hamlets, this proves the Dasyus' civilised life. They were not living in caves, as is suggested by some from meagre references, which most probably described their condition after their defeat at the hands of the Aryans.[2] Further on, in the same book[3] Ashwins are said to be destroying the Dasyu. Again Indra has let open the light to the Arya by crushing Vrita, the spider-like son of Danu. The hymn[4] sings on: the Dasyu has been set aside. The next sloka[5] honours those men who surpass all their rivals as the Aryas surpass the Dasyus. From this it is evident that the Aryans were in earnest competition with the Dasyus in the struggle and were winning almost everywhere. The hymn is born of confidence when Indra is again praised for having destroyed the Dasyus, thus protecting *Aryam varnam.*[6] In a mood of sceptical distrust Rishi Bharadwaja questions the attribute and power of Indra, but only after reciting Indra's feat of quickly humbling the Dasyus.[7] Agni is called on to expel the Dasyus from the dwelling.[8] This may be a reference to an inroad by the non-Aryans within an Aryan settlement. The deity later on, in self-praise, recounts his exploits and says that he has not given the *numa* of the Aryas to the Dasyus.[1]

---

[1] i, 103, 3
[2] See later, Civilisation of the aborigines.
[3] i, 117, 21.
[4] ii, 11, 18.
[5] ii, 11, 19.
[6] iii, 34, 9.
[7] vi, 18, 3.
[8] vii, 5, 6.

The main difference betwen the Dasyu and the Aryan must have been one of religion. In the early stages of a nation's growth, particularly those of the Aryans, their religious notions pervade their whole being. Gods being thrust into every successful act as its cause and the belief being universal that the performance of religious rites, according to certain fixed unalterable rules only, would please the gods, the natural consequence is that the race continually fights against aliens even when there may not be any necessity for it. Caution is required that the rites, etc., are not contaminated by even an unconscious admixture of barbarian custom. The history of the Greeks[2] and Romans[3] abundantly proves this and there is no reason to suppose that things were otherwise in the case of the Indo-Aryans. In the Rig Veda the non-Aryans are repeatedly spoken of in derogation as to their religious rites, which differed from those of the Aryans. Thus the Dasyus are called *avrata*, *i.e.*, without ordinances (religious rites) and the prayer is to compel them to submit to the performer of sacrifices (the Aryan).[4] The *avrata* Dasyu is in another passage[5] asked to be consumed by the deity, as a wooden vessel is burnt by fire. The triumphant worshipper of the deity seeks again to shame the *avrata*, who has no observances.[6] The same note of triumph forms the strains of another verse.[7] The Dasyu has been described elsewhere[8] as impious, perhaps meaning without devotion (*abrahmana*). A severe verse occurs in the Rig Veda[9] in which the Dasyu is called

---

[1] x, 49, 3.

[2] Wachsmuth : Historical Antiquities of the Greeks.

[3] Warde Fowler : Religious Experience of the Roman People.

[4] i, 51, 8.

[5] i, 175, 3.

[6] vi, 14, 3.

[7] ix, 41, 2.

[8] iv, 16, 9.

[9] vii, 6, 3.

a-yajyu (without sacrifice), *mridhra-vach* and other uncharitable names, and the main cause of offence on the part of the Dasyu seems to be that he does not perform sacrifices after the Aryan method. Parvata is asked to hurl the Dasyu down to the stern smiter,[1] *viz.*, death, the Dasyu who follows other and strange rites (*anya vrata*), who is not a human being, or, it may mean, who is the enemy of man (*amanusham*), who does not offer sacrifices to the gods (*a-yajvan*) and finally who is not solicitous about the gods (*a-devayu*). The Dasyu is always spoken of as *a-karman*, *i.e.*, without religious rites.[2]

Some have cast doubts as to the historicity of the Dasyus, they being only a mythological race. Although many of the above passages are liable to this interpretation, others admittedly are not so. They are described in one passage[3] as *anas* (*anasodasyun amrinah*). Sayanaacharya explains *anasa* as *asya rahitam* and *asya*, he says, stands for *sabdam*, so that the meaning would be voiceless, *i.e.*, speaking a tongue not understood by the Aryans. The later use of the word mlechchha (root mlechchh, to speak rudely) with reference to barbarians would support this view. Sayana is a great authority but his meaning here seems somewhat farfetched. The more natural meaning of Muller is noseless (a=non, nasa=nose) in contrast to the prominent nose of the Aryans. In any case this verse read with the other cited above goes to prove that Dasyu is not merely a superhuman being or a myth but a person having physical features coming directly in contact with the Aryans as rival and enemy, and capable of being destroyed by them.

Another word that has also been used in the same sense occurs more frequently in the Rig Veda. But this word has also been used to mean so many other things that the unwary is apt to be confounded. We are not here concerned with the various uses of the term and so shall take up directly only those passages where Dasa does surely mean human beings. Indra, the subduer of all the formidable, the lord, conducts the Dasa at his pleasure.[1] Indra again is said to have rendered human enemies, whether Dasa or Arya, easy to be overcome.[2] This passage shows that the Aryas used to fight even among themselves, so that by this time they must have been well settled in the land to afford to have mutual warfare. The same idea is conveyed when Indra, the hero, is praised as having destroyed both classes of enemies, Dasa and Arya adversaries.[3] Again, the expression *hato vritranyarya hato dasani* must mean, in spite of the neuter gender used, Aryas and Dasas, the interpretation being *aryaih* and *dasaih kritani*, *i.e.*, things done by them severally.[4] Indra and Varuna are jointly invoked to destroy the gods' enemies, whether Dasas or Aryas.[5] The worshippers hope further that, with the aid of Indra, they may overcome and destroy in battle all those who propose to assail them, whether they may be Dasas, Aryas or enemies of the gods.[6] Agni is praised for having defeated the strong men, Dasas and Vritras, like a resolute warrior overcoming those who are desirous of battle.[7] With Manyu as an ally the worshippers express their confidence of overcoming the Dasa and the Arya.[8]

---

[1] viii, 70, 11.

[2] x, 22, 8.

[3] v, 29, 10.

The non-Aryans possessed cities or forts (purah may be interpreted either ways). Indra is said to have gone on destroying the Dasi purah.[9] The word purah may have meant fort, for in one passage[10] we find it described as ayasih, made of iron or, at least, of metal (ayas meaning metal). The combined effort of Indra and Agni is the subject of another verse[1] which goes to overthrow ninety strongholds (purah), ruled over by the Dasas, *dasapatnih purah*. Indra's prowess is proclaimed again,[2] where, exhilarated by the soma juice, he demolished the cities of the Dasas. In one passage[3] the expression Dasir visah has led to the supposition that the non-Aryans also had their clan organisation. We have already discussed it and have only to say that this and the succeeding references prove conclusively that whatever may be the meaning of Vis in these passages, whether clan or people unrelated, the organisation on this point was the same among the Aryas and the Anaryas, since the same word is used in the case of both. The expression *viso dasirakrinoraprashastah*[4] is also similarly interpreted as meaning clan. Visah here has been usually translated by prajah, people or subject. Akrino means karmahinah, *i.e.*, without religious rites or functions. Aprashastah means garhita, *i.e.*, vicious. The expression is interpreted by earlier foreign authorities as referring to servile classes, slaves rather than free non-Aryans. But as the slaves were only those non-Aryans who were reduced in war the expression should also be equally applicable to the non-slave Dasas, even if in this particular passage the slaves only are meant. The word Vis has been interpreted also as standing for clan. In a third passage[5] *vishwa abhiyujo vishuchir aryaya visho ava tarirdasih*, explained by Sayana as *vishuchih sarvatra vartamanah*, would show that the Aryas were surrounded on all hands by the non-Aryans. Thus here Dasa cannot be rendered as the servile classes as is done by Wilson and Colebrooke. The usual fight over Vis is found here as well.

---

[1] v, 34, 6.

[2] vi, 22, 10.

[3] vi, 33, 3.

[4] vi, 60, 6.

[5] vii, 83, 1.

[6] x, 38, 3.

[7] x, 69, 6.

[8] x, 83, 1.

[9] i, 103, 3.

[10] ii, 20, 8.

---

[1] iii, 12, 6.

[2] iv, 32, 10.

[3] ii, 11. 4.

[4] iv, 28. 4.

[5] vi, 25, 2.

Another distinguishing feature of the non-Aryans seems to be their black skin, *krishna tvach.* Indra punishes the aggressors by tearing off the black skin.[1] This seems to refer to flaying alive. The theory of black skin as a distinguishing feature is not vitiated by connecting with this passage, as has been done by some, the legendary asura named Krishna, the black, advancing with ten thousand followers to the banks of the Ansumati river, where he is said to have committed fearful devastation until Indra, with the Marutas, was sent against him by Brihaspati, when he was defeated by Indra and his skin stripped. The black skin is also referred to in a later passage of the Rig Veda.[2]

From the above description of the aborigines we can fairly expect that a people with such organisations, with cities or forts, knowing the use of iron or metal (ayas), should be prosperous materially. There are in fact some references to their wealth and these, though few in number, are scattered throughout the whole of the Rig Veda. The earliest mention[3] of their wealth is made when the deity is asked to slay every one of them and bestow upon the worshippers the wealth belonging to them, so that here the amount of wealth, whatever it might consist of, is coveted by the Aryas. If, as we have reason to believe, the condition of the Aryan at this time was one of material prosperity we are bound to say that the wealth of the non-Aryans also must have been very great, otherwise the worshippers could have asked for the destruction of the troublesome foes but would not have coveted their wealth. In another passage[4] the deity is said to have carried off the wealth of one of the aboriginal chiefs, after demolishing his cities. Again Indra is asked to cut off the foes as an old pruner cuts off the protruding branch of a creeper and humble the Dasa so that the worshippers may divide his accumulated treasure.[1] The passage is significant as a proof of the Dasa's wealth. The prayer is not so much for the destruction of the Dasa, but for his humiliation, so that palpably the object is his wealth, which is said to be accumulated. All this strongly suggests that the wealth of the Dasa was very great indeed.

---

[1] i, 130, 8.

[2] ix, 41, 1.

[3] i, 176, 4.

[4] iv, 30, 13.

So, we see that the aborigines of the Vedic age were also a progressive race or a combination of many races, that the contest with the Aryas was a severe one and that they possessed wealth and had cities or forts, in one case spoken of as made of *ayas*. But there are certain other passages which prove that the non-Aryans were dwellers of mountain caves, etc., so that their civilisation cannot be said to have advanced much. Here clearly there is a conflict between two sets of evidences. Two explanations seem justified, both of which may be true in different localities. There may have been different races among the non-Aryans themselves, some very advanced, others less so. The former may have been conquerors themselves and the rulers of the soil, as the Aryans were after supplanting them. The second explanation is that the dwellers in the caves were the civilised non-Aryans seeking refuge in natural fastnesses after their cities or habitats had been destroyed or occupied by the advancing Aryans. Both these seem to have been going on, otherwise the references to the wealth, power and civilisation of the non-Aryans discussed previously become inexplicable. The few passages, moreover, that occur in the Rig Veda, all refer to one Sambara, a non-Aryan chief, and can be easily interpreted as a dislodged chief or the son of a previously dislodged chief. In such a case dwelling in the mountain would be natural, *e.g.*, Indra discovered Sambara dwelling in the mountains for forty years.[1]

---

[1] viii, 40, 6.

Kingship.

We now pass on to the study of kingship in the period of the Rig Veda (Rajan). Thus Prajapati prays to Indra to make him a king, *kuvid mam gopam karase kuvid rajanam.*[2] It seems on the whole to be a historical fact that government by the king was the normal polity of the early as also of the later Aryans in India. The consolidation of the power of the king during the period of settlement is quite natural, as is shown in the history of the early Teutons, the post-Conquest English. The Bretwaldas, Heptarchy, also point to the same fact. The history of the Basileus in the earliest Greek settlement also substantially supports this view. The theoretical argument in favour of the growth of kingship, in supersession of the clan organisations, is very ably presented by Jenks.[3] In India also we find that the same circumstances prevailed. The Aryans, in their march of conquest, had to meet, at every turn,[4] powerful bands of non-Aryans equally versed in many of the arts of civilisation known to the Aryans themselves. Continuous war followed, which must have led, as in the case of the early Teutons, to the growth of the royal power. In Continental Europe the king had to overcome, in England, to assimilate the clan organisation with jarring interests and based on conjunction by birth rather than military efficiency. In India these obstacles did not, at any rate, exist to the extent that they did in Europe, for we hear so little of clans, and of these many allusions are, on the whole, not certain. Although there are references to Aryans fighting Aryans,[1] yet we are not certain whether one clan of Aryans fought with another, or merely the people of one place fought against those of another. Nor can we even suggest, without launching ourselves into conjectural absurdities, that these wars were fought for the king either to consolidate or to disrupt his powers as conflicting with those of the clan units. Of clan also we have only the variedly interpreted Vis, the war cry, *Visam-Visam*, and the word Gotra which has hopelessly lost its original meaning. Be that what it may have been, we come across the word Rajan which means the king or the person who rules. Whether the king was elected or hereditary is another moot point. In the later Samhita days hereditary kingship seems to have been the prevalent institution, reference being made to some king reigning for forty generations. Perhaps there was some sort of election as well, which might have been confined to the election of the king from the members of the royal family. The legend, in the Nirukta,[2] of Devapi and Shantanu which forms the subject of one of the later hymns of the Rig Veda[3] refers to the practical deposition of the elder brother by the younger. But in this case the hereditary line was not disturbed and in fact the two brothers were reconciled by the subsequent ill-luck of Shantanu, and Devapi's assumption of the Brahmanic functions forms only an exception to the rule of the Brahmana in religious ceremonies. But one passage in the Rig Veda[4] is strongly suggestive. Varuna (who is merely the divine aspect of the king)[5] is said to be sustained by the waters of his creation. The hymn goes on; like subjects choosing a king, they, smitten with fear, fled from Vritra. The choice of a king by the people is clearly suggested. But the condition of free choice of the President of the United States of America or of the French Republic could not have existed. Otherwise why should they be smitten with fear? In any way that the choice of the king was known is certain; the uncertainty hangs about the how and the when of this election.

---

[1] ii, 12, 11; iv, 30. 14; vi, 26, 5.

[2] iii, 43, 5.

[3] Law and Politics in the Middle Ages, Ch. III.

[4] vi, 25, 2.

---

[1] vi, 22, 2; vi, 33, 3: vi, 60, 6; vii, 83, 1; x, 38, 3.

[2] ii, 10.

[3] x, 98.

[4] x, 124, 8.

[5] Macdonell. Vedic Mythology.

If we turn to the duty of the king, we find that this may be divided into two, *viz.*, his duty in war and his duty in times of peace. In connection with the non-Aryans we have seen that frequent battles ensued between the Aryans and the non-Aryans.[1] The growth of an early king out of the people or out of the priest or out of the patriarchs is undoubtedly due to war. Therefore efficiency in war, in leading, fighting, organising, or in propitiating the gods (in the case of the priest, of which there is very great probability) required that it must be shown and, in the beginning, maintained by personal prowess in the field. So that it is reasonable to assume that the chief function of the king in war was to lead the army. Specially is this probable in view of the fact that there was already the threefold differentiation of society into the Brahmanas, the Kshatriyas and the Vis. In times of war the only possible function of the king could have been the leading of the military party. Besides these offensive wars against the non-Aryans and hostile Aryans, the king also undertook the defence against aggression. The prayer for being made the protector or rather a monarch of men is found in one passage in the Rig Veda, *kuvid mam gopam karase janasya kuvid rajanam.*[2]

---

[1] ii, 12, 11; iv, 26, 3; vi, 26, 5; vi, 33, 4; vii, 18; vii, 33; vii, 83, etc.

[2] iii, 43, 5.

In peace the king used to command the obedience of the people. He used to favour the able men[1] in his territory. Another important verse in the Rig Veda[2] says: "the king abides prosperous in his own abode. The earth bears fruit for him at all seasons. His subjects willingly pay homage to him." Sometimes this obedience or payment was forced.[3]

In the later Sutras we find reference to the function of the king as civil judge but in the Rig Veda there is no such mention. But his function as a criminal judge is hinted at in some passages. Varuna, the personified god representing the king, has spies for the determination of what is true from what is false.[4] The doers of good deeds are favoured, being recompensed ultimately for their acts.[5] The passage is obscure but considering the state of society we may well presume that certain criminal jurisdiction attached itself to the king. The spies of Varuna are specifically desired to praise to their master the acts of the worshipper.[6] Yama also speaks of the spies of gods which wander upon earth and never close their eyes.[7] All these passages refer to the gods, either Varuna specially or to gods in general, but the analogy seems to be applicable to the government of the king. Later on, we shall have occasion to refer to the laws and their administration. But here the king's function also seems partly to be the supervision of the criminal administration.

The king seems to have lived in a well built palace which must have had many elaborate arrangements. In one passage[8] it is said that sovereigns sit down in this substantial and elegant hall built with a thousand columns.

---

[1] i, 67, 1.

[2] iv, 50, 8.

[3] vii, 6, 5; ix, 7, 5.

[4] iv, 4, 3; vi, 67, 5.

[5] vii, 61, 3.

[6] vii, 87, 3.

[7] x, 10, 8.

[8] ii. 41, 5.

Varuna again is said to have a vast comprehensive dwelling with a thousand doors.[1] Frequent reference is made to brilliant dress, perhaps, of the king. The earliest passage in the Rig Veda[2] speaks of the gomatarah (*i.e.,* having for their mother the cow, whence the earth; it may mean king) embellishing themselves with ornaments, shining resplendent, in their persons, with brilliant decorations. All those round the son of Chedi are spoken of as wearing cuirasses of leather.[3] The Maruts when decked with various ornaments look handsome and are compared with kings.[4] Lastly the king is supposed to be the landowner but of this there is no proof whatsoever in the Rig Veda, though ample evidence of it is found in later literature.

Another word *Svaraj*[5] also occurs in the Rig Veda which may be interpreted as self-ruler or king. But it has in all cases been used in connection with the gods and does not seem to require more than this passing notice.

Viraja seems to signify a title of royalty but its metaphorical use throughout the Rig Veda[6] does not allow us to derive from it any useful knowledge about the king. The idea of monarch or sole ruler seems to be known in that age when the smaller kings among the Aryans were perhaps fighting among themselves. The fact that even in idea *Ekaraja* could be conceived suggests the movement of political events towards a unity under the supervision of the king. In the Rig Veda[7] in connection with the god Indra, the word is used and that only once. But we may profitably remember that even in the days of the so-called Heptarchy the

---

[1] vii, 88, 5.

[2] i, 85, 3.

[3] viii, 5, 38.

[4] x, 78, 1.

[5] i, 36, 7; i, 51, 15; i, 61, 9.

[6] i, 188, 5; ix, 96, 18; x, 166, 1.

[7] viii, 37, 3.

English were without a name for the holder of kingship. Bretwalda did not convey that nor could cynning serve the purpose. This view of the importance of the word will be manifest when we understand that the Rig Veda has already conceived of the superior ruler, the sovereign, having power greater than that of the king. Rishi Prajapati refers in a hymn to the universal sovereign, *samraj*.[1] The sun again is called samraj, since he measures the three worlds.[2] Indra is also said to hold this position in another hymn.[3] Rishi Bharadwaj tells Indra that Abhyarvartin, the son of Chayamana, is the opulent supreme sovereign, *samraj*, and has made presents to the Rishi.[4] This reference is clearly to a king who, at least for the time, was the most powerful one and thus was entitled to the high name. But this might have been the effect of the presents on the minds of the Rishi. In any case the term when applied to man was not an absurdity. The same use of it is also found in another verse of Sobhari[5] where he and his people seek the alliance of Trasadasyu for his protection.

The king was indeed a prominent person with regal paraphernalia and not merely the first among men. It is not exactly certain whether there was any body of men like the Teutonic comitatus, the personal followers, who were attached to him in war, plunder and in any new settlement. Considering the meagre references that we can expect from the hymns of the Rig Veda about all such matters we are bound to turn to the later period and seek for confirmation of any hint in the Rig Veda, as to some institution, in the prevailing practice in the later Samhitas. Thus only can we form any idea as to the household organisation of the king. Of course after the king his son must have been the most prominent man there, since either he was recognised as the future king or if the system of election was prevalent he was one of the best candidates for kingship. He was called Raja-putra.[1] To the people also, as to the other members of the royal household, he was an object of veneration; and going about like princes was different from going about like an ordinary man. It is uncertain whether he used to be surrounded by a body of retainers like his royal father, but in dress and personal bearing it is only reasonable to presume that he followed the king.

---

[1] iii, 55, 7.

[2] iii, 56, 5.

[3] iv, 21, 1.

[4] vi, 27, 8.

[5] viii, 19, 32.

Nobility.

Among the people who formed the personal attendants of the king, men of high qualities and probably of high birth formed the majority. Though not exactly like the comitatus, still these formed a sort of united body following the king, as leaders perhaps in times of war. Most probably they were the associates of the king in peace as well. They must all have been of the Kshatriya class, most probably of the royal family and at all times must have formed a distinct body of men and described by the word Rajan which otherwise means the king in the Rig Veda. Indeed this must have been the class which was in the mind of Rishi Narayana when in his famous Purusha Sukta he spoke of Rajanya as a class coming out of the arms of Purusha.[2] The deity Brahmanaspati is again asked in an earlier verse to concentrate his strength and slay foes, being associated with the regal attendants.[3] The high position of the Rajan is evident from Rishi Kutsa's hymn[4] where the adorable Indra and Agni are said to delight either in his own house or in that of a Brahmana or in that of a Rajan *yad brahmani rajani va*. Later on, in the Rig Veda the descendant of the great patriarch Angirasa, in his invocation to Indra, says that the worshippers, *i.e.*, the chiefs, may acquire riches.[1] Then again the medicinal plants or herbs are said to congregate, for the extirpation of disease, etc., as the princes of the ruling house assemble in the field of battle.[2] Here the word is used in the plural and from the comparison made with the plants, seems to indicate the equality of their position. From this the attempt has been made to prove that in some cases, instead of the king, all the members of the royal family used to rule together and the comparison is made with the Teutonic settlement described by Tacitus[3] where there is reference to such a case. Without denying the probability of such a fact, we consider it reasonable to state that the passing reference in one passage only does not warrant the presumption of such an institution. Zimmer seems to have projected his idea about the Teutonic polity into this verse and reads things too much in advance.

---

[1] x, 40, 3.

[2] x, 90, 12.

[3] i, 40, 8.

[4] i, 108, 7.

Retainers and dependents.

Apart from these nobles attending the king there was a body of retainers and dependants who were of much lower positiou and perhaps of lower birth. The word Ibha occurs several times in the Rig Veda[4] but the meaning of this word has been so widely interpreted that it would be unsafe to put much reliance on this alone. Sayana, for example, interprets it to mean "elephant" and he has been followed by some others. Yet proofs, besides this, of the king's retinue are not wanting in the Rig Veda. The word Vira literally means strong and heroic man. This word means most probably in some of the earliest passages[5] the sturdy attendants of a king or a chief.

---

[1] x, 42, 10.

[2] x, 97, 6.

[3] Annals, ii. 88.

[4] i, 18, 4; i, 114, 8

[5] i, 84, 17; iv, 4, 1; ix, 57, 3.

Elsewhere[1] also this interpretation may be put on it. Finally the word is used in connection with Taranta[2] who is called a Vira. But all these may mean merely a heroic person or persons and the only thing in favour of the interpretation is the later (post-Rig Veda) practice of having such attendants of the king.

Besides his retinue the king assuredly had about him a body of dependents who are mentioned repeatedly in the Rig Veda. *Upasti*[3] means a servant who depends upon his master but who is not exactly a slave. According to both the interpretations[4] of this passage *upasti* is a servant but it is not exactly clear from the context whether the servant belonged usually to the king or to every man of importance. But even if it was so in the case of the latter, we can safely assert its existence in the case of the king, who must have possessed, in these matters of position and authority, what an ordinary non-royal man of importance did. The meaning of another word, *sti*, is very obscure and it is said that it signifies dependents whose position is lower than that of the Vis, prajah or the subjects, but better than that of the slaves. It occurs frequently in the Rig Veda [5] but its meaning in this connection seems to be at least uncertain. *Stipa* similarly has been interpreted to mean the attendant on the king's person, *i.e.*, the guard of his body. But its use in connection with the gods[6] seems to be incompatible with his dependent position.

Tribute.

We have seen previously that there was frequent warfare between the Aryans and the non-Aryans as well as among the Aryans themselves. We do not know anything about treaties or other international relations such as we hear of even in the early days of Egypt (*e.g.*, in the reign of Thotmes III), Babylonia, Assyria, etc.[1] In most cases war continued till one party was totally crushed and became either slaves or subjects or fled away to the hills or other places of natural protection living like King Sambara.[2] In most cases the terms of settlement were fixed at the cessation of hostilities. But there were other cases too when the humbled or the weak party used to pay tribute to the strong or the victor This might have been paid either for protection or for non-molestation on the part of the strong. The word *bali* has been indeed frequently used to signify offerings to gods.[3] But *balihrit* cannot but have meant payment of tribute to the king. The mighty Agni first baffled the Asuras who were humbled and then made them tributaries (*i.e.*, paying tributes to Nahusha.[4] Most unequivocally again the dwellers of the Yamuna and the Tritsus got tribute of the heads of the horses from the Ajas, the Sighrus, the Yakshas, after Indra had killed Bheda in battle.[5] All these are cases of payment of tribute from hostile tribes who by reduction in war were compelled to do so. But there seems to have been the practice of such payment from a friendly people or from one's own subjects even. There is one passage only in the Rig Veda[6] but it is a very cogent proof of the fact. Indra is propitiated here to render the people payers of bali, *balihrit*.

---

[1] iv, 29, 2; v, 20, 4.

[2] v. 61. 5.

[3] x, 97, 23.

[4] By Sayana and by Mahidhara.

[5] vii. 19, 11; x, 34; x, 148, 4.

[6] vii, 66, 3; x. 69, 4.

Vispati.

Passing now to the other institutions of the Vedic polity we meet first of all with *Vispati*, a word of very various interpretation.

---

[1] For ready reference, see Hall's Ancient History of the Near East. More authoritative ones are the books of Maspero, Breasted, etc

[2] ii, 12, 11; iv, 30, 14; vi, 26, 5.

[3] v, 1, 10; viii, 100, 9.

[4] vii, 6, 5.

[5] vii, 18, 19.

[6] x, 176, 6.

Zimmer interprets it in one passage[1] as the lord of the canton in which case the kingdom must have been divided into well organised units of smaller dimensions having a sort of independence resembling perhaps the self-governing units of a modern state. But Zimmer's theory based on the mere mention of the *Vispati* seems to be at least indecisive. In another and less ambiguous use[2] of the word it is supposed either to mean the lord of the dwelling in which case he must be taken as a subordinate of the king, if he had any political function, or to mean the king himself, if Vis is translated by praja or subjects. It seems that the proper interpretation of *Vispati* in this connection cannot be ascertained unless it is clear whether the kingdom of a ruler was big or small. If it was very big then these *Vispatis* must have had political functions and as such their position may be taken to have been more independent than mere governors of a province with probably the same functions. This assumption is reasonable in view of the fact that in later days[3] we come across Satapati, the lord of a hundred villages, who must have had, primarily political function as an officer.[4] Moreover without such local units even in the Rig Veda period there could not have been any unity within the realm of the king. But this may be negatived by the suppositions (*i*) that the kingdoms were small, so that the king and the nobles were sufficient to carry on the government with perhaps the help of the *spashah* or the spy; or (*ii*) that the government was not organised enough in those early days. But the condition of the people, as evidenced from their system of agriculture, arts and crafts does not warrant the second supposition.

---

[1] i, 37, 8.

[2] i, 12, 2; i, 26, 7; i, 164, 1; ii, 1, 8; iii, 2, 10; iii, 40, 3; vii, 39, 2; ix, 108, 10; x, 4, 4; x, 135, 1.

[3] Maitrayani Samhita, iv, 14, 12; Taittiriya Brahmana, ii, 5, 4, 2.

[4] He had judicial functions as well.

Vrajapati.

Even if such an organisation was not necessary for carrying on the administration in times of peace, it was certainly necessary in times of war. And its prevalence in war shows that the army was not so small as to be led directly by the nobles and the king. This again would naturally presuppose a big state, which necessitated local governors or *Vispatis*.

However, in war even perhaps in migration the *Vrajapati* used to be attended by the *Kulapas*.[1] The *kulapas* were undoubtedly the heads of families so that the heads of families used to go to war under the leadership of the *Vrajapati*. The interpretation has been put on it by some according to which the *Vrajapati* is identified with the *Gramani*, so that the headman of the village was attended in war by the heads of families of the same village. Thus it would be the same as the division of the host according to the division of the curies in the Roman army of the early days. This interpretation seems to be very probable as it is impossible to deny the significance of the connection between the *Vrajapati* and the *Kulapas*. And who else could be their leader except the *Gramani* whom we find mentioned in the Rig Veda?[2] The other interpretation that it means merely a chieftain surrounded by the heads of families is literally more correct. But the question arises who could be this chieftain? The proper explanation of this seems to be the identification of the *Gramani* with the *Vrajapati* in times of war. It may be remembered, by the way, that the word *Vrajapati* also establishes its connection (in its etymological meaning) with the house, so that he was the headman somewhere and the fact of his leading the *Kulapas* or the heads of families offers the irresistible temptation to identify him with the leader of the clan, families of the same stock. In such cases the *Gramani* was, in ordinary times, the representative head of the clan. But we have already referred to this discussion among experts, under Family.

---

[1] x, 179, 2.

[2] x, 62, 11; x, 107, 5.

The Assembly.

The most important and the typically Aryan institution was the Assembly. In all the three European branches of the Aryan race the Greeks, the Romans and the Teutons, the original political elements were the king, the council and the assembly[1]; out of these have grown the various complex institutions of the present day by the process of, what Herbert Spencer, would call, differentiation and integration.[2] The same three elements were prevalent among the Indo-Aryans. We have seen the king and we have also had occasion to know the council whose members the rajanya, the nobles, must have been. But in this latter case there is no recorded evidence to prove that there used to be actual deliberations of these nobles with the king. Still it would not be unreasonable to presume that the king was influenced by the opinions of those who by virtue of their birth and military skill surrounded him in times of peace and war. In connection with the Assembly also we shall have occasion to notice the probability of such an oligarchical body, which eventually superseded the assembly of the people.

Throughout the whole of the Rig Veda from the earliest Mandala down to the latest we find very frequent references to words meaning assembly. We shall take each of these words separately and try to discover the exact institution that was meant by its use. *Vidatha* is by far the most important word as it occurs so many times in the Rig Veda.[3] In all these passages the word seems to signify order, not actual assemblies. These help us only so far as we attempt to argue by analogy by referring to the etymological meaning; and we must not be unconscious about its uncertainty as a word positively standing for an assembly. But besides these, the word *Vidatha* has been used for assembly in three different senses, *viz.*, (*i*) assembly for secular ends, (*ii*) assembly for religious ends and (*iii*) assembly for war. Unfortunately no record of the procedure or the transactions of the assembly is found in the Rig Veda but the scant references in quite a large number of verses[1] scattered throughout the Rig Veda confirm the existence of such institutions for secular purposes. The business of administration in those days was not an elaborate affair and we cannot expect that the king with such limited duties would be performing many public acts requiring the sanction of the people. Perhaps those matters only were brought before the assembly which required the sanction or approval of the people because these were not already sanctioned by custom. Such departures could not have been very many in number. But the frequent occurrence of the word for secular purposes suggests that these assemblies met even when there was no such departure. In such cases the function of the assembly can only be a matter of guesswork. The formal meeting would presuppose a superior organisation and superior ideas of rules and method to what we are justified in asserting from a study of the Vedic civilisation. Nor can it be confidently asserted that the general body of the subjects was yet conversant, or was at all interested in being conversant, with the affairs of the state, beyond the protection of their hearth and fields.

---

[1] Freeman : Comparative Politics. Sidgwick : Development of European Polity.

[2] Herbert Spencer : Principles of Sociology, Vol II, Part V, Chs. 3-4.

[3] i, 31, 6; i, 117, 25; iii, 1, 18; iii, 27, 7; iv, 38, 4; vi, 8, 1; x, 85, 26; x, 92, 2.

The assembly for religious purposes[2] was evidently for worshipping the deity and in this respect it is possible to say that it used to meet very regularly, *e.g.*, three times a day.[1] There is also reference of the assembly of the deities themselves.[2]

---

[1] ii. 1, 4; ii. 27, 12; ii. 27. 17; iii, 38. 5-6; v. 63, 2; vii, 66. 10; viii. 39. 1; x, 12, 7.

[2] i, 60, 1; ii, 39, 1; iii, 1, 1.

There are a few references to the *Vidatha* for purposes of war.[3] The Maruts, for example, are said to sport in the assembly which evidently met for the demolition of the intruders or invaders.[4] Again the Maruts are found propitiated in a *Vidatha* evidently assembled to make preparations for war.[5]

In one passage in the Rig Veda[6] we find the word *Samgati* used for an assembly where Indra, Vayu and Brihaspati are invoked to join and thus be favourable.

Sabha is another important word, signifying assembly with which we often meet in the Rig Veda.[7] But sometimes it is difficult to ascertain whether it means the assembly or the hall of assembly. The tendency is to interpret it as assembly, since we find *Sabha-Saha*,[8] *i.e.*, eminent in the assembly. In one passage Sabha has been used as the hall of dicing.[9] But the general use of the word is to denote an assembly for more serious matters. The actual deliberations must for ever remain unknown.

Only glimpses here and there come to us from passing references. Sometimes they assembled for general conversation about the welfare or use of cows[10] which were of course an important part of their wealth. Then again there was an assembly for social intercourse as when it is said[11] that the well born sacrificers met in assembly before the radiant fires (the fires here do not refer to the actual sacrifices). This passage has been further interpreted to limit the meaning of Sabha to an assembly of the well born or the oligarchs of ancient days, so that Sabha according to these authorities meant more properly the Council of the Aryans as noticed in the European branches. This view of the meaning of Sabha is perhaps supported by the hymn[1] of Devatithi of the Kanwa family where it is said that the devotees of Indra being by his grace possessed of horses, of cars, of cattle and of goodly form, ever supplied with high class food and riches, entered an assembly. Further on, the assembly of priests is called Sabha.[2] Thus in these cases the constituents of the assembly (Sabha) so far as they have been explicitly mentioned were all Brahmans and Maghavans or rich patrons. So that the practically missing link of the western Council is thus furnished from the Rig Veda. The word of course cannot be limited in all cases to such an oligarchic association but, in these passages it seems to be fair to assume that Sabha was an assembly of the aristocratic element, the priests and the nobles, with striking similarity to the earliest sitting, in England, of Lords, spiritual and temporal. Besides social intercourse and discussion about cows, etc., a third function is attributed to the Sabha from an obscure use of the word.[3] It is said that the purpose was debate and verbal contest. Of these we have of course many, rather too many, in later ages but their evidence in the Rig Veda is at least doubtful. It seems probable that sometimes the word is used to mean the fire in the place or the hall of the assembly.[4] The sons of Bharat sing of Agni as Sabhya and places it on the most frequented (*i.e.*, where people assembled) banks of the Drishadvati, Apaya and Sarswati rivers.[5] Agni in this connection is also referred to as being placed in the midst (of the house perhaps) where all could worship him.[6]

---

[1] ii, 4, 8.

[2] iii, 56, 8.

[3] v, 59, 2

[4] i, 166, 2.

[5] i, 167, 6.

[6] x, 141, 4.

[7] vi. 28, 6; viii, 4, 9; viii, 34, 6.

[8] x, 71, 10.

[9] x. 34, 6.

[10] vi, 28, 6.

[11] vii, 1, 4.

---

[1] viii, 4, 9.

[2] x, 71, 10.

[3] ii, 24, 13.

[4] v, 3, 11.

[5] iii, 23, 4.

[6] vii, 7, 5.

Samiti is another word which occurs frequently in the Rig Veda even in the first Mandala.[1] It is interpreted as the *assembly of the Vedic tribe*. As such it would be of utmost importance. But unfortunately the social organisation of the Vedic age does not warrant that meaning. In the Rig Veda it would be absurd to attempt to be positive in the assertion of this meaning. We should not at the same time deny the validity of such an interpretation; we are simply without sufficient material about either the clan or the large co-ordination of clans, the tribe. Some authorities, particularly Ludwig,[2] consider that the distinction between Sabha and Samiti was that the former was the assembly of the Brahamans and Maghavans[3] whereas in the Samiti the Vis, prajah or people, assembled and the Brahamans and Maghavans were not excluded but could sit at their option. According to this view, therefore, the threefold organisation of the Aryans into the King, the Council and the Assembly was the same in the east as it was in the west. But the passages are of much less information with regard to these nice distinctions than we could desire. The probability is that there was such a distinction as in the west, but we cannot definitely say that it actually did exist in the period of the Rig Veda.

It seems that the king used to be present in the Samiti as this fact is alluded to in more than one passage in the Rig Veda.[4] But it is not certain whether he used to deliberate there or what was the significance of his presence. His position must have commanded very great respect and perhaps his explanation or request fell upon the assembly like command. No mention of dispute is anywhere found and although we find it mentioned in the Rig Veda (not in connection with the Samiti) that the king could be deposed[1] we cannot attribute that function to this assembly.

---

[1] i, 95, 8,

[2] Translation of the Rig Veda, 3, 253.

[3] vii, 1, 4; viii, 4, 9; x, 71, 10.

[4] ix, 92, 6; x, 97, 6.

On a previous occasion we have discussed whether the king was hereditary or whether he was elected. Here we may mention that some authorities, for example Zimmer, attribute to the Samiti the function of electing the king. They base their arguments on Rishi Durvasa's hymn of which the deity is any inaugurated Raja.[2] The king is consecrated here and is asked to come amongst "us" and be steady and unvacillating. May all his subjects desire him for their king and may the kingdom never fall from him. The whole theory seems to be based upon the use of the first person plural so that it is the Samiti or it is on behalf of the Samiti that the Rishi calls on the Raja to be installed in office. This point of view is, however, vitiated by the use of the first person singular in the first half of the verse where the Rishi consecrates him. The consecration was undoubtedly the work of the purohita. Then, is it fair or reasonable to assume that the next words of welcome were uttered by or on behalf of the assembly? Or should these be taken as utterances of the same person, using the plural in honour of the high position of the priest? Both are anomalies. If the fact is that the purohita used the word in self glory why did he not do it with regard to the consecration? But it may be said in answer that the consecration was in fact a personal act in which he could not speak in the plural; whereas the king was the ruler of all persons and as such might be addressed by him in the plural. This is the only possible explanation and this explanation goes in support of the opposite theory that the priest was speaking consciously or unconsciously on behalf of the assembly. But even then it is very doubtful whether we are entitled to say from this one sukta that the king was elected by the Samiti. After all it is made to depend upon the peculiar idiom in the verse which may have been a mistake. But considering the ceremony of consecration which evidently was public and the set method of initiating divine propitiation according to which the purohita speaks, may we not be justified in holding that the people assembled, although they did not choose actually, yet by that ceremony and recital of welcome, practically approved the succession of the king? This would accord with the Teutonic system of approval in assemblies by shouts and beating of the spears against the shield.[1] But Zimmer's further attempt to see in the Samiti the rule of oligarchy[2] seems to be unwarranted. Perhaps the choice of the king by the comitatus or by the princeps is what he intends to read in the Vedic polity.

---

[1] x, 173, 2.

[2] x, 173, also see X. 174.

It was recognised that mutual understanding and concord were necessary for the king's successes. The Samiti and the king should act harmoniously. The triumphant king says[3]; I seize upon your minds, your pious observances, your prowess in war. The hymn of Rishi Samvana addressing the assembly says: Meet together, talk together, let your minds apprehend alike.[4] Again we find: Common be the prayer of this assembly, common the acquirement, common the purpose, associated be the desire. I repeat for you a common prayer. I offer for you with a common libation.[5] Common be your intention. Common be your hearts. Common be your thoughts, so that there may be a thorough union among you.[1] These are the last three slokas of the last Sukta of the Rig Veda. Their vigour, earnestness and directness must have appealed to the audience when this hymn was chanted in later days.

---

[1] Referred to by both Cæsar and Tacitus.

[2] From ix, 92, 6; x 97, 6.

[3] x, 166, 4.

[4] x, 191, 2.

[5] x, 191, 3.

Police.

Turning now to the other parts of the ancient statecraft we find very meagre and obscure references to the police system. The word Ugra as it is used in the Brihadaranyaka Upanishad[2] means technically the man in authority from which Max Müller renders it into policeman. It occurs in the Rig Veda[3] only once where perhaps it does not mean anything beyond mighty or powerful man. Similarly the word Jivagribha, literally seizing alive, is interpreted as the policeman.[4] This meaning of the word in this passage would have been acceptable only as a confirmation of other evidence but it does not seem to prove the existence of policeman by itself even if all allowance be made for the word Madhyamasi, mediator or arbiter, used in the next vorse.[5] Moreover, considering the state of the society where there was no law,[6] and also considering the prevalence of the wergeld[7] such doubtful interpretations should be rejected.

Judicial organisation.

The judicial organisation was very elaborate in the period of the Atharva Veda. In the Rig Veda we find only the *Madhyamasi*[8] who was perhaps a man of influence to whom the disputing parties voluntarily, it seems, submitted their case for settlement. He was not an officer of the state, and most probably the parties were under no moral obligation even to submit to him. According to some **authorities** the Sabha used to perform some judicial functions **but** the proceedings of this body are hopelessly beyond **human** knowledge. If it di perform that work it would very closely resemble the Greek Apella.

---

[1] x, 191, 4.

[2] iv, 3, 37-38.

[3] vii, 38, 6.

[4] x, 97, 11.

[5] x, 97, 12.

[6] See later under Law.

[7] See later under Vairadaya.

[8] x, 97, 12.

Sapatha, in later samhitas, means oath from which it is clear that the practice of trial by oath existed in those days. The word, however, occurs in the Rig Veda only once, and there it means "curse."[1] It may have developed its meaning later on, but in the Rig Veda it does not mean anything else. On the other hand, there is one passage in the Rig Veda[2] where, though the word Sapatha is not used, yet a practice is described which, taken roundly, is the same thing as an oath. It runs thus : May I this day die if I am a spirit of ill, or if I have ever injured the life of any man. Therefore, as a part of the judicial organisation of the time we cannot say that oath was systematically practised. But its use in the later days and its mention in the above passage make it probable that the system had its genesis in the Rig Veda. This view will be in conformity with what we find later on in connection with the administration of justice. The later society had the *gramyavadin* (village judge), the *abhiprasnin* (defendant), the *jnatri* (witness) as also *prasna* (pleading), *divya* (order) and *sapatha* as oath in judicial proceedings. We hear also of *vaira* in the Rig Veda[3] where *vaira deya* should literally mean that which should be paid in compensation. But its use as wergeld, as it was in later days, cannot be deduced from this one reference. In an earlier passage[4] the expression *satadaya* is used in connection with Raka. It cannot possibly mean anything but one whose wergeld is one hundred (cows). The word *daya* in later Sanskrit as, perhaps it does in the Rig Veda, means liability and its technical use in Dharma Sutras or legal texts has made it 'legal liability.' From this it seems that wergeld was in practice in those early days. This view is corroborated by the organisation of society without sufficient criminal jurisdiction either of the king or of any central authority. From the analogy of the Teutonic system[1] we know that wergeld prevailed as the successor of direct personal revenge, an eye for an eye or a tooth for a tooth. In Europe this wergeld was part of the private revenge brought about and thus limited by the interference of the king as the military leader, because such revenge always tended to weaken the strength of the clans joined together under the common leader. In later days it was one of the most important judicial functions of the king to assure the people that his might would compel the injured to accept the wer and the wrongdoer to pay it.[2] In fact this uncertainty of the realisation or acceptance of the wer was one of the greatest hindrances to social progress. At first the king was not powerful enough to take up the administration of justice except, perhaps, with regard to bootless crimes. He had necessarily to depend on the clan institutions; so we may say that the wergeld as part of private revenge precedes the authority of the king at a time when he is powerful enough as a military leader to stop indiscriminate revenge and also substitute the wer or commutation for even blood revenge, but when he is not strong enough to enforce or direct its actual currency. It is a period of transition when the king is only emerging into importance and the host in arms is only appreciating, by actual concrete results in the battlefield, the disastrous effects of indiscriminate or blood revenge among themselves. The same conditions prevailed in the Indo-Aryan society during the period of the Rig Veda. From the study of the king and his household organisation, the family and the assemblies, we may be certain that he was growing in power. Military necessities during the course of the settlement in India required that the hands of the king should be strengthened as much as possible by eliminating the cause of internal exhaustion through direct private revenge, if the race was to fight its way through an equally civilised non-Aryan settlement. But yet we do not find in the Rig Veda much trace of the criminal or civil jurisdiction of the king. The fact can only be explained by accepting that the king was not powerful enough or free enough to undertake all this but yet could enforce, by way of military discipline, the abrogation of direct revenge. This explanation seems to be irresistible if we look to the later Samhita period when the wer was enforced by the king's courts. This is the natural result of the extension of the power and authority of the king. If our explanation is correct, we may see, even from only these two references,[1] that the wer, as compensation for private revenge, limiting indiscriminate and blood revenge, did exist in the period of the Rig Veda, and that this wer came under the jurisdiction of the king and was assimilated by the royal courts in later days even as was the case in Europe.[2]

---

[1] x, 87, 15.

[2] vii, 104, 15

[3] v, 61, 8

[4] ii, 32, 4.

---

[1] Stubbs: Constitutional History of England, Vol. I.

[2] Jenks: Law and Politics in the Middle Ages. Ch. IV.

Another practice of later days which is supposed to have been prevalent during the period of the Rig Veda is the ordeal, *divya*. But it seems that we cannot discover it in the Rig Veda although the attempt has been made to interpret two passages[3] as referring to this

---

[1] ii, 32, 4; v, 61, 8.

[2] Jenks as cited above.

[3] i, 158, 4; iii, 53, 22,

practice. Dirghatamas in the earlier text can hardly be **construed** in this light without doing violence to the **language.**

Law.

From the above it will be abundantly clear that the judicial organisation did not grow much in the period of the Rig Veda. If we remember at the same time that theft and robbery were the only crimes mentioned and Madhyamasi, the only settler of disputes, we should not expect that *dharma*, *i.e.*, law developed to any great extent. Yet the law or custom was recognised as is evident from the various references that are found in Rig Veda. Even in the first Mandala[1] we find *dharma* or law being upheld by Vishnu, the preserver. There were two substantive duties enjoined by law. For example, the priests were to dress soma ox, *ukshanam prisnim apachanta*[2]; the minor gods, Sadhyas, were to sacrifice with sacrifice.[3] Intelligent people are asked in one hymn[4] to offer to the powerful Vaishwanara precious things with holy rites, and it ends by saying: let no one violate the eternal law. In addressing Agni Rishi Kata speaks of its being first kindled according to law, *prathama-nudharma*,[5] the self-revolving (days). The ceremonies addressed to the gods and the laws of man are mentioned as devoted to Indra.[6] Again, Agni, the divine purifier, is invoked as favouring the law of the worshippers.[7] Mitra and Varuna are also mentioned as protecting *dharma* by their office.[8] They are, on another occasion, called steady in the performance of their functions according to law.[9] The word is, perhaps, used in the sense of civil law in connection with Madhyamasi, the mediator.[10]

---

[1] i. 22, 18.
[2] i, 164, 43.
[3] i, 164, 50.
[4] iii. 3, 1.
[5] iii, 17, 1.
[6] iii, 60, 6.
[7] v, 26, 7.
[8] v, 63, 7.
[9] v, 72, 2.
[10] x, 97, 12.

The exact nature of the law at this time is obscure. That it meant some set rules or recognised customs, more or less widely known, is certain. Sir Henry Maine's admirable division of law in its earliest period of unconscious and spontaneous development is into (*i*) judgment, (*ii*) customary law, and (*iii*) code, *i.e.*, authorised version of the law as embodied in some declaration by the state.[1] Of isolated judgments based on the peculiar circumstances of each case, forming ultimately parts of the law, we do not at all hear in the early ages. The recognition of *dharma* as set rules or practices which were supposed to be protected by Vishnu and which bound even the gods and the priests is a clear proof that the period of isolated Themistes or even of Maine's Dike was long outgrown by the Aryan society as it is found in the Rig Veda. This fact is important, inasmuch as the conception of such order, method and harmony as is involved in that of law is the heritage of a nation at a very late stage of its early history. Religion was, as it was bound to be, the predominant element, and that is why the term *dharma* is nsed sŏ often in the sense of rules or practices directing religious rites and ceremonies.

As punishment was not within the normal jurisdiction either of the king or of the priests the ancient law usually lay down duties to be performed. The punishment, where referred to, was left, to the pleasure or displeasure of the gods.

Debt.

But though the law with regard to civil matters seems to be so meagre or so scantily referred to, on the contrary civil relations do not appear to be so simple. Debts were frequently contracted and as frequently repaid. The divine Adityas are called the acquitters of the debts of the worshippers.[1] Sayana considers *rinani* in this connection to be real debts. Even if the word be metaphorically used, as is said by some, that would not vitiate the fact of the existence of debts in actual life. Varuna is propitiated in one hymn[2] and asked to discharge the debts (rinani) contracted by the worshipper and his progenitors. He wishes again to be independent of another for his livelihood. Just as in modern times, the ancient people used to gamble, and at dice betting seems to be the usual custom, as it is at cards to-day. Here also we find mention of the losing dicer being in debt. The gambler ever in fear, anxious for wealth, is referred to as going by night to the dwelling of others (to plunder).[3] This passage is significant from another point of view. Why should the gambler be so much distressed and so much in fear, why should he be so desperate as to contemplate theft, unless there were effective means by which the debts could be realised? From the other slokas of the hymn, it is to be seen that he did not care either for his wife, mother or his home, so that any harm to them would not have affected him much. The punishment must have been then corporal. This would support our theory about private revenge as the prevailing custom. He must pay or suffer punishment at the hands of the creditor. Perhaps he could be reduced to slavery as seems to be probable from a verse where it is mentioned that the father, mother, brothers of the debtor said that they did not know him (*i.e.*, recognise him as their relative) and asked the creditor to take him away bound, wherever he wished.[4] In an obscure passage[5] perhaps the punishment is referred to as "held bound in ropes as the thief is held for stealing."

---

[1] Ancient Law, Ch. I. See also Early Law and Custom.

---

[1] ii. 27, 4.

[2] ii. 28, 9.

[3] x, 34. 10.

[4] x, 34, 4.

[5] vii, 86. 5.

But as in modern days punishment is not the only nor the principal incentive to the fulfilment of a contract, so also it seems to be the case in those days. The references to debts point to a practically universal practice; and frequent default would not be favourable to a subsequent contraction of debt. In fact we have to assume that repayment of debt was as usual as it was contracted. In one hymn we actually find mention of such repayment, *rinani samni*, which means "to pay off a debt."[1] Attempt has been made to read into this verse details as to the repayment of the principal or the interest. But that does not seem to be reasonable; the comparison with hearts and hoofs must be taken as merely metaphorical.

---

[1] viii, 47, 17.

Aryanism and the Rig-Vedic Age

BY

H. BRUCE HANNAH.

II

The latest contribution to the luxuriant wilderness of literature which has grown up around our present subject, is Vol. I of a book entitled *Ṛig-Vedic India*, by Abinas Chandra Das, M.A., B.L., Lecturer in Ancient Indian History and Culture, Calcutta University. As it was understood that Mr. Das intended to make whatever capital was reasonably possible out of the belief that a vast *samūdra*, or sea, once rolled over the arid territories now known as Rājputāna; and, as a fact like that certainly opens out a new field for thought in connection with the problem of the origin of the Āryas; I eagerly looked forward for some time to the appearance of his book, which has now been published by the University. It does, indeed, very thoroughly and in a most interesting manner, deal with this aspect of the subject: but it also contains much more than that. Besides being a veritable store-house of references to literature in general, and especially to passages in the *Ṛig-Veda* and other *Saṁhitās*, so far as they relate in any way to Indo-Āryan Mythology, Origins, and Culture, it probes back into nothing less remote than "Geological time"—ever, apparently, with the so-called "Indo-Āryan" Peoples (Pūrūs, Yādūs, Tūrvaśas, Anūs, Drūhyūs, and so forth) even then standing by in Sapta-Sindhavaḥ as the leading, if not the only, representatives of *Civilized* Humanity: and it simply overwhelms us with a more or less marshalled array of the most staggering statements, as of fact, the most astounding inferences, by way of argument, and conclusions regarding the antiquity of "Indo-Āryan" Race-and Culture-Origins, and the origins of other ethnoi and their cultures from the "Indo-Āryans," which leave one positively limp and breathless with amazement The difficulty of criticising such a writer somewhat resembles that wherewith one would probably be confronted if called upon to answer the charmingly ingenuous and dogmatic utterances of a precociously serious and intelligent child, who, having learnt how to read, has thus been introduced to a new world of knowledge and thought, whose wonders, however, it very naturally views from the standpoint of its own immature mentality, being still piously and unshakably convinced of the universal and eternal truth of all that its preceptors have hitherto taught it. The latter half of the book is devoted exclusively to an elaborate and apparently able onslaught upon the views advanced by the late Mr. Bāl Gangadhar Tilak in his two well-known works, *The Orion, or Researches into the Antiquity of the Vedas*, and *The Arctic Home in the Vedas.* With what Mr. Das has to say on this head I may endeavour to deal later on.

The spirit in which Mr. Das addresses himself to his task is admirable. In his *Preface* he says—

> "I invite in the name of Truth candid criticism of the points urged by me in this work. None will rejoice more than myself if they prove, on criticism, to be untenable. For, Truth alone triumpheth, and not Untruth, as a Vedic Rishi has declared. I have ventured to write this book on the principle that one hypothesis is probably as good as another, if it can be supported by facts and arguments, and afford some food for thinking to the learned" (p. xvii).

Without pretending to rank with "the learned," but only as one who is deeply interested in Antiquity, who has bestowed much time and thought upon some of its many fascinating mysteries, and who is passably well-informed, I propose to accept Mr. Das's invitation, and to say, fairly but frankly, as he desires, exactly what I think about certain of the statements, arguments, and conclusions contained in *Rig-Vedic India* which have more particularly caught my attention. To deal with everything, or even adequately with anything, that Mr. Das provides therein for our delectation, would require the writing of another book.

If a personal touch be admissible, I would like to add that I, for one, appreciate his standpoint when he says that none will rejoice more than himself if the points urged by him prove to be untenable: but beneath this statement I feel that there lurks a complacent belief on Mr. Das's part that the necessity for any such rejoicings is never very likely to arise. For in later life—bringing with it ampler and fresher data of knowledge and maturer consideration—I have myself had occasion to discard not a few much-cherished original theories which, in my younger days, I had had the temerity to advance. And to-day I can say from my heart that I am exceedingly glad that I did discard them. In every case apparent loss and chagrin have in fact proved to be substantial gain and content. Now, I am not only ready, but eager, to reject any of my own views when I see that they are wrong, and to adopt those of other thinkers, as soon as I am satisfied that they are right. I, also, want to get at *the Truth*. Hence, *Realities, not Dreams*, should be our life's motto. Nothing else is worth while. Nevertheless, faithful is the saying and worthy of all acceptation, that even a wrong hypothesis, once honestly thought out and held, but eventually as honestly thrown aside, is not wholly without its value. At the least, it serves as a sign-post, warning us that by that particular way we need no longer expect to make any progress.

Shortly put: Mr. Das's book overflows with information, both interesting and useful. Not only is it very readable, even as in parts an extravaganza, but much of it commends itself to acceptance, and, to that extent, it will doubtless prove a welcome addition to our stock of learning on the subject dealt with. These remarks apply particularly to some of Mr. Das's statistics relating to the physical conditions in and around Sapta-Sindhavaḥ in very remote times, and also perhaps to his exhaustive and searching criticisms of Mr. Tilak's views concerning the North Pole and Circum-Polar regions as the Home in days long gone by of the ancestors of the Vedic Peoples. But, *quant au reste*, I must confess that in my judgment Mr. Das's statements as of fact fly in the face of the evidence, his arguments are unconvincing, sometimes mere wriggles, while his main conclusions are based on nothing more substantial than his own fixed and intense belief in them, and an equally intense, almost fanatical, pre-determination on his part to see in everything something which contributes to the support of those conclusions, and accordingly, as a sort of pious duty, to represent everything as in fact supporting and establishing them. In this connection, wherever from his point of view necessary, Mr. Das does not even recoil from maintaining that white is really, or was originally, black, and black is really, or was originally, white. As for the claim that the "Indo-Āryans" (Pūrūs, Yādūs, Tūrvaśas, Anūs, Drūhyūs, etc.) have ever led the van of Human Progress—not, be it noted, as archæan prehuman progenitors of Mankind, with regard to whose morphology, physiology, and psychology nothing definite is known and all is biological guess-work; not even as doubtful creatures of the

Pithecanthropus type; nay, not even as genuine but primitive "Man"; but bluntly as representatives of *highly civilized* Humanity, dwelling autochthonously in Sapta-Sindhavaḥ—that, for Mr. Das, is a little thing to say. His enterprizing gaze sweeps a very much wider horizon. If, he maintains, the disappearance of the Rājputāna Sarasvatī was synchronous with that of the Rājputāna Sea—

> "then the event must have taken place some tens of thousands of years ago, if not hundreds of thousands or millions, and must have been posterior to the composition of, at least, some of the oldest hymns of the Rig-Veda" (pp. 7, 8).

Nay, as already noticed, for the beginnings of "Indo-Āryan" ethnic life, or rather for those of "Indo-Āryan" civilization, he demands nothing less than some point or points in "Geological time." True, this claim is not to be found compactly set forth in any one definite and all-embracing statement to which we can permanently pin him down. Rather is it to be gathered from divers mutually contradictory assertions purporting to be of fact, but all of which cannot possibly be correct, and various devious excogitations purporting to be arguments, scattered throughout the book—some set down with an air of confidence, others advanced hesitatingly, and still others more in the nature of suggestive little "asides," from which, nevertheless, only one conclusion is drawable, but each contributing its own quota to the idea sought to be established—an idea, however, which Mr. Das plainly expects his readers to take at a mouthful and to swallow at a gulp. True, also—though this again is a mere detail on which, perhaps, Mr. Das would blushingly prefer that no unnecessary stress should be laid—he does not himself appear to be over-certain with regard to his Period of Beginnings, or as he terms it, "Epoch." There are even indications that, at the back of his mind, Mr. Das is uncomfortably conscious that he is putting his case at least rather riskily and unwisely high. The impression left upon me in this respect is that he is trying playfully to see how much his readers will really stand. The very last sentence of his book runs thus—

> "As regards my calculation of the age of some of the oldest hymns of the Rig-Veda which I have set down to *the Miocene, or at any rate to the Pliocene or the Pleistocene epoch*" (a fairly useful range of choice, this!), "I am afraid that Vedic scholars will accuse me of romancing wildly. But if the Geological deductions are found to be correct, my calculations which are based on them cannot be wrong. They will either stand or fall with them" (p. 567). (The italics are mine.)

What relative durations should be assigned to the various sub-periods into which the main Geological Eras, or Ages, are divisible, is still, I understand, a very moot point. But the following is Mr. H. R. Knipe's estimate of the length of the Quaternary Age and the last two sub-periods of the Tertiary or Kainozoic Age in America. According to Mr. George Prentiss, an American writer, it purports to be founded on the thicknesses of the successive geological strata—in America, I presume—the figures being conjectural and in the round; and even then, in each case, they are to be regarded as a minimum.

Tertiary Age—	*Years ago.*
Beginning of Miocene sub-period ...	1,250,000
" Pliocene " ...	400,000
Quaternary Age—	
Beginning of Pleistocene sub-period ...	200,000
" Present " ...	50,000

Thus, in America, the sub-periods seem to have lasted as follows—

	Years
Miocene	850,000
Pliocene	200,000
Pleistocene	150,000
Present	50,000
Total ...	1,250,000

European estimates are considerably greater. The depths of the deposits for the various sub-periods, from the commencement of the Tertiary or Kainozoic Age to present times (in Europe, presumably), are taken to be as follows—

Tertiary Age—	*Depth in feet.*
Eocene	20,000
Oligocene	12,000
Miocene	14,000
Pliocene	12,000
Quaternary Age—	
Pleistocene and Recent ...	4,000

These deposits are assumed to have accumulated at the rate of 1 mm. (representing 1000 feet) to 100,000 years. Hence, if, as we shall see has been supposed by some, the so-called *Hominidae* began to differentiate from the Primates shortly before the close of the Oligocene sub-period, that would mean that it has taken about 3,050,000 years for the different species and varieties of existing Humanity to attain their present stages of development in evolution, as evolution is understood by the Darwinists.

There is, of course, a very noticeable difference between this estimate and the estimate suggested by H. R. Knipe—though no doubt the two hemispheres have had very different geological experiences. But even if we adopt the American figures, clearly Mr. Abinas Chandra Das's cheerful reference to the Miocene period, beginning some 1¼ million years ago, or at any rate to the Pliocene, beginning some 400,000 years ago, gives him a fairly generous margin within which to place the commencement of "Indo-Āryan" Civilization as he visualizes it, *i.e.*, as associated with the Ṛig-Vedic Pūrūs, Yādūs, Tūrvaśas, etc. The reader will not have failed to observe Mr. Das's artless inclusion of the *Pleistocene* (roughly Glacial and Inter-Glacial) sub-period—which, in Europe, only began about 400,000 years ago, and, in America, only about 200,000 years ago!—in his list of "epochs." He mentions it in the very same breath as that in which he mentions the Miocene. One way or another he puts forward no less than 3 sub-periods in all —Miocene, Pliocene, and Pleistocene. Though, if the Miocene is right, why, mention the Pleistocene? While, if the Pleistocene is right, necessarily the Miocene is impossible. What, in his heart of hearts, Mr. Das really wishes us to be impressed with, is obviously his suggestion as to the *Miocene*. As obviously, however, he feels that it would only be wise to provide a door of escape, in case of need. Accordingly, not exactly happy even as regards the Pliocene, he inserts an unobtrusive little reference to the Pleistocene. Perchance, of course, it will not be required. In that case, it will probably be overlooked. But, should it *be* required—why, then, there it is, at call. Nay, seemingly just to show, if necessary, that this is really only by way of superabundant caution; as a proof, so to speak, of his exceeding moderate-mindedness; elsewhere, dropping all allusion to this comparatively recent, and therefore comparatively useless, sub-period, he informs us that:—

> "there can be no doubt that the Indo-Aryans" (*sic*) "lived and flourished *as a civilised people*" (my italics) "in the Miocene or Pliocene epoch" (p. 22).

—presumably, of course, in Sapta-Sindhavaḥ, or Sapta-Sindhū as Mr. Das usually calls it, in order, apparently, to accord with Avestan *Hapta-Hendū*. At the same time, in another place, even this amusingly worded assertion is guarded by the following curious little "hedge":—

> "the Ṛig-Vedic *civilisation* goes back to geological times, *probably to the end of the Miocene epoch*" (p. 331). (My italics.)

So that—although Mr. Das has seemingly provided against every foreseeable eventuality—after all, even for himself, the Miocene, as associable with Civilized "Indo-Āryan" Origins, is a mere shadow-name—not the sub-period itself, but only its fluttering "scut" (and that merely as a *probability*, or rather as an emotionally beckoning *desideratum*), being lightly yet deliberately mentioned—possibly owing to some fervent up-rush of sentimental zeal which Mr. Das has found himself unable to resist. Coming, therefore, down to bed-rock, his claim in this connection really shrinks to the statement (at which we arrive by a process of elimination) that "Indo-Āryan" Civilization commenced with the opening of the Pliocene sub-period—say some 400,000 years ago according to Knipe, or some 1,200,000 years ago according to European calculations—and even of this statement Mr. Das cannot be very sure, otherwise he would never have thought it necessary, or at least expedient, to indulge in that quiet little precautionary reference to the Pleistocene! However, even adopting the modester American estimate of 400,000 years ago for the opening of the Pliocene, such an epoch of Beginnings would not be at all bad for ethnoi who, as is well known, (even to Mr. Das, see p. 259, *foot note*), were *ignorant of the art of writing* up till as recently as say *circa* B.C. 800-600—and then imported their first script (*i.e.*, *Brāhmi*) from Western Asia, the country, whence issued at least some of the 5 non-Āryan *Janāhs* mentioned in the *Ṛig-Veda* under the names Pūrūs, Yādūs, Tūrvaśas, Anūs, and Drūhyūs, somewhere about the stirring and famous epoch, B.C. 1151. *Could not even write!* Naturally and inevitably the question rushes to one's lips—How, in wonder, was this; if, as Mr. Das would have us believe, nearly half a million years of super-eminent Culture lay behind the Ṛig-Vedic Pūrūs and their tribal associates as inhabitants of **Sapta-Sindhavaḥ? Surely** there must be something wrong somewhere! **Personally** I believe that some of **them**—*e.g.*, **the Pūrūs and the** Yādūs—*could* write; and that it was *they* who (as **Pūra-**Satiū and Yādāi Amorites) brought the so-called ***Brāhmī*** with them from Nāharīn, *circa* B.C. 1151 aforesaid.

But what are these "calculations" of which Mr. Das speaks? Let us examine the nature of the argument with which he imagines that he establishes his case. First, with regard to the earliest known appearance of *Genus Homo*, either on the Terrestrial Globe itself, or in the Indian Peninsula. Mr. Das begins by referring lugubriously to the fact that anthropologists and archæologists are loath to admit that man made his *début* on Earth in the Miocene sub-period of the Tertiary Age, or even in the Pliocene sub-period of the same Age, but would fain assign that event to as late as sometime in the Quaternary Age—though he himself, we cannot but remember, felt constrained to slip in an allusion to the Pleistocene; and he quotes the *Encyclopædia Britannica* as authority for an estimate that the event occurred between 20 and 100 thousand years ago, to be taken however as a minimum. "This," comments Mr. Das, rather querulously, "may be the minimum of the cautious scientist": and, feeling that he, at any rate, is in no way subject to a like restraint, he jubilantly adds, "but the maximum remains undetermined." Revelling thus in his liberty to choose a maximum for himself, he proceeds to aver that "there is, however, geological and archæological evidence to prove *the existence of Pliocene man in the Indian Peninsula.* In the river gravels of the Narmada and the Godaveri have been discovered remains of human implements, which prove the *Pliocene* man" (pp. 22, 23). My italics.

And what does the "evidence" referred to consist of? First, the human implements just mentioned. *N.B.*—

These have been associated with the Pleistocene (*Geology of India*, by D. N. Wadia, p. 263).

Secondly, apparently, an observation by Medlicott and Blanford that—

> "the valley gravels of the Indian Peninsula, and especially some fossiliferous beds in the Narmada valley, contain a few Siwalik mammalia associated with species more nearly allied to those now living"; and further, that there is "a marked resemblance between the Siwalik fauna and that of the European Miocene."

How any of these facts and observations advantage Mr. Das, as the champion of "Indo-Āryan" Culture-Origins in Sapta-Sindhavaḥ (whether Miocene or even Pleistocene), I fail to see. Indeed, I am even willing to supplement this part of Mr. Das's case, by citing in the same connection the following remarks of Professor G. F. Scott Elliot—

> "There is no doubt that in the forests of Southern Europe, and in the Siwalik Hills in India, Pliocene anthropoids were, if not exactly common objects of the countryside, by no means rare" (*Prehistoric Man and his Story*, p. 36).

And thirdly, a statement by Mr. Edward Clodd that—

> "Quite lately there have been discovered in an upper Miocene deposit in Further India" (a considerable remove, be it noted, from Sapta-Sindhavaḥ and the Siwāliks!) "some clipped flint flakes of undoubted human workmanship" (p. 23).

Well, assuming that Clodd is right in his ideas about the workmanship of these flakes, and before turning our attention to what Mr. Das *makes* of this "evidence" of the existence of *Pliocene* (why not even Miocene?) man in the *Indian Peninsula*, let us pause for a moment to ponder over the views, on the subject of the origin of *Genus Homo*, of one or two specialists whose names will be a sufficient guarantee of the reasonableness, if not the correctness, of whatever they have to say. At any rate, we may accept their statements of fact, if not their deductions therefrom, whether in general or in particular. In his *Darwinism* Professor A. R. Wallace remarks that the anthropoid primates—

> "are essentially arboreal in their structure, whereas the great distinctive character of man is his special adaptation to terrestrial locomotion" (p. 450).

That I quote merely by way of introduction to the following. In his *Origin of Man*, recently published, Mr. Carveth Read, of University College, London, who is obviously a Wallacite and a Darwinist, and has a theory of his own to expound, starts off at the outset thus—

> "That the human species as we now see it, with its several races, Mongolian, Negro, Mediterranean, etc., represents a Family of the Primates, is generally agreed; and there is evidence that the Family formerly comprised other species that have become extinct."
>
> "Our nearest surviving zoological relatives are the Gorilla, Chimpanzee and Orang, and (as a further remove) the Siamong and Gibbon."

I am not quoting Mr. Carveth Read approvingly for his advocacy of the theory that Humanity is lineally descended from a family of the anthropoid primates, but for a purpose which will reveal itself presently. In spite, he explains, of the fundamental anatomical resemblance that subsists between these anthropoids and true *Homo Sapiens*, the differences are both great and innumerable. Yet, he maintains, they are all traceable to the influence of one variation operating amongst the original anthropoid conditions—possibly before the close of the Oligocene sub-period of the Tertiary Age, *i.e.*, in Europe about 3,050,000, and in America about 1,300,000, years ago. This was a *change of diet* made by the anthropoids —probably not a complete change, but certainly a partial and occasional one. It is not necessary, he says, to suppose that all anthropoids entered on the new departure. Perhaps only some, possibly only one, did so. In any case morphological, physiological, and psychological variations followed: and these tended to become inherited. Theretofore the Simian Primates had been vegetarians and fruit-eaters: also their homes had been in the forests, and they had dwelt for the most part up in the trees. Then climatic alterations or something else must have happened, to deprive them wholly or in part of their accustomed food-supplies. It became obligatory for them to find some other adequate means of sustenance. Fish, birds, and other animals naturally suggested themselves. In short, the Primates became carnivorous. They adopted the *rôle* of hunters—at least occasionally, and as a supplementary mode of satisfying their needs—their operations being conducted sometimes individually, but also, no doubt, sometimes in parties. This effected a radical change in their home-life. Of necessity they began to dwell, more or less permanently, no longer up in the trees, but down upon the ground; and, in time, no longer even in the forests, but at least occasionally, and probably with increasing frequency, out in the open country. Thus they became plantigrades (*i.e.*, walkers upon their soles), and, concurrently with the growth of that habit, they began to assume the erect attitude. From all this it would seem reasonable to infer that, with the gradual or sudden diminution of their original food-supplies, *pari passu* they were driven from the tropics—where, presumably, in remoter times, forest-conditions were much more luxuriantly developed than elsewhere—and, in pursuit of their new vocation as hunters, they were compelled to accommodate themselves to the very different conditions of the temperate zones—north or south. As a matter of fact, owing to the distribution of the continental land-masses in those days, I imagine that they did not have much choice in that connection: the nature of their environment would have sent most of them north. Hence, it was probably in countries situate along a line verging on the lower latitudes of the northern temperate zone that *Genus Homo* made his *début* upon the stage of terrestrial life. Certainly it was somewhere along that line that, so far as we know, the first developments of Civilization burgeoned forth in course of evolution. Such, or something like this, is Mr. Carveth Read's theory. It is clever: but, my views regarding Evolution, or Volution, as I prefer to call it, being what they are, I cannot accept the theory as representing anything that really occurred in the past, so far, at least, as it is intended as an explanation of the first appearance of Man. But it shows us how the Earth was inhabited just before the opening of the Miocene—at least in Mr. Carveth Read's opinion. There was no sign of *Man* then.

Again: with particular reference to the Miocene sub-period, let us listen to the remarks of another learned scientist—Professor Scott Elliot. Not only are they interesting in themselves, but they are very pertinent to the subject now under consideration—revealing, as they do, the Miocene under a light vastly different from the light under which Mr. Das would fain have us gaze upon it.

Professor Scott Elliot's earlier observations introduce us (*inter alia*) to what he calls "our Eocene lemur-monkey-man," to *Homosimius precursor* of the Oligocene sub-period; and to "our Miocene ancestors," who, however, he admits, were "very hypothetical forerunners." Then he proceeds thus—

> "We do not mean to imply that either man or any of the living anthropoid apes were descended severally from more than one of these Miocene precursors. But it is quite satisfactory to know that we have a choice, that there are at least six or seven possible ancestors which are known to have lived in the Miocene period.

> According to an interesting essay by Macnamara, even at and before the beginning of the Miocene period, certain apes had no less than 170 structural characters in common with man; the giant apes of the Early Miocene had 150 of these common characters, which increased to over 300 in the Mid-Miocene chimpanzee-like form. In the Upper Miocene, in his view, man became a plantigrade animal.
>
> The range of the closely allied man-like apes at this early period seems to have included all southern continental Europe, and probably the Siwalik Hills in India" (*Prehistoric Man and his Story*, p. 87).

Further on, we read—

> "We have seen that a possible ancestor of man inhabited Miocene Europe and North India along with the ancestors of the lemurs and apes,."

and, speaking of the orang-utan (pongo), the 13 species of gibbon, the gorilla, the pseudo-gorilla, the chimpanzee (Pan) and the pygmy races of Man, Professor Scott Elliot invites attention to the fact that—

> "All these three groups, therefore—lemurs, anthropoid apes, and pygmies—occur *in the same part of the world*—that is, in Africa south of the Sahara, India south of the Indian desert, and Malaya, and in the larger oceanic islands as far as the Philippines. But in Mio-Pliocene times they had only reached the *northern edge* of the Sahara-Asiatic desert (if so far), and the Siwalik Hills in North India."

In other words—

> "The pygmies—the least modified and most primitive, or 'infantile,' of all races—as well as modern lemurs and apes, all live south of the desert or in South India. The only exceptions are those pygmies who entered Europe in the Ice Ages, and came from North (*i.e.*, north of the desert) Africa" (*Ibid*, pp. 88, 89).

Then we are told that all the probability from the facts of distribution seems to point to there having taken place, some time say in the second half of the Pliocene and the first half of the Pleistocene, a mighty migration of lemurs and anthropoid apes, followed by swarms of pygmy Man, across the vast arid stretch of country which extends from the west coast of Africa to the frontiers of India, and which, because, geologically speaking, it seems to be comparatively recent, probably presented in those days a very different appearance from that which it presents now, *i.e.*, was more easily traversible. Somewhere, *en route*, says Professor Scott Elliot, in each of the three cases, the migrants divided into two parties—an African group going south-west, and an Indo-Malayan group wandering south-east. Indeed, there is reason to believe that at that time there was a warm and humid climate throughout Northern Egypt and Palestine. Three extensive fresh-water lakes, it seems, existed in the regions now represented by the lower courses of the Nile, the Jordan, and the Orontes. The Dead Sea still marks the site of the old Jordanic lake, though its waters are now some 1300 feet lower than were those of its predecessor.

> "In that latitude," says the Professor, "the climate must have been warm as well as wet, and a luxuriant forest would surely have thriven along their shores. Let us suppose that one of the Pliocene man-like apes (perhaps Pithecanthropus) lived in a semitropical forest in this district—that is, between the Mediterranean on the east (west ?), the Indian frontier on the west (east ?), the Black Sea and Caspian Sea on the north, and the Indian ocean on the south, and in the first half of the Pliocene period. Let us also suppose that he became man before the end of the Pliocene. One set of his descendants left for India and the great oceanic islands, following the route of the Asiatic lemurs, the orang-utan, and the gibbon. Another set went to Africa by the south-west, becoming in course of time the African pygmy, and also following the track of the other lemurs and of the gorilla-chimpanzee ancestor. In another chapter we try to show that both these routes are regular highroads of migration quite clearly marked in later historic, as well as prehistoric, ages" (*Ibid*, pp. 90, 91).

Now, why am I harking back to the story of these anthropoids? Personally I am by no means attracted by the "Evolution Theory," as held in scientific circles in connection with the "Darwinian Hypothesis." Rather am I inclined—for reasons which will presently appear—to agree with Mr. Das, with Professor Agassiz, as quoted in *Rig-Vedic India* (pp. 21, 22), and with the ancient Āryas, whose views on this subject, according to Mr. Das (who, by "Āryas," doubtless means his "Indo-Āryans"), were very different from those now dominant throughout the "learned" world. Also, I am in sympathy with Mr. E. Kay Robinson, writer of the charming articles appearing from time to time in the Calcutta *Englishman*, under the heading "In England Now," in his recent protest against the Darwinian doctrine of "The Struggle for Existence": and I am disposed to declare myself on the side of that most unconventional but very entertaining and instructive American thinker and writer, Mr. George Prentiss, author of "The Ages of Ice and Creation," when, at p. 159, he explicitly denies that Evolution can so develop one species of plants or animals that eventually it becomes an entirely different species. Of course, as Agassiz says—

> "There is a manifest progress in the succession of beings on the surface of the earth. This progress (progression ?) consists in an increasing similarity of the living faunas, and, among the vertebrates especially, in their increasing resemblance to man. But this connection is not the consequence of a direct lineage between the faunas of different ages. There is nothing like parental descent connecting them" (*Principles of Zoology*, p. 205).

As already indicated in a previous paper, Evolution, for me, is merely one aspect of a much vaster kosmic process which goes on everlastingly in the Existential World, but is ultimately based on the nature and operations of eternal unmanifest self-subsistent Being. The other, and logically earlier, aspect is Involution. Actually, however, Involution and Evolution are concurrent. The process, as a whole, I call *Volution.* Development is as much a feature of *In*volution as of Evolution: but popularly (nay, even in scientific circles) *all* Development—whether, in fact, Involutional or Evolutional—is supposed to be, and indeed is generally called, Evolution. Nevertheless much, nay, most, of the Development that we behold actually going on in Volution, is rightly describable as Involution, not Evolution: for the operations of Evolution proper are usually invisible to the ordinary eye—however highly intellectual or even intuitional it may be.

With the object of producing the Phenomenal or Existential World, or what is popularly termed "Creation," the self-subsistent Supreme *Ens*, Living-Substance, or Divine Spirit (in other words *Brahma*, or the *Param-Ātmaṅ*), by an eternal act of ineffably sublime self-sacrifice, subjects itself involutionally to conditions and limitations of Time, Space, and Causality—which limiting or conditioning it is that alone enables the consciousness of the finite individual organism, or *Jīv-Ātmaṅ*, to get Knowledge, *i.e.*, definitely to cognize the forms of Existence, or manifested Life, and even indefinitely, though positively, to apprehend Subsistence, or unmanifest Living-Substance. This stupendous *Kĕnōsis*, as we may call it, represents the downward arc of Volution—all its operations being Involutional. Slowly but surely, throughout its seemingly beginningless and endless course, the Divine Spirit, *as such*, ever more and more loses its own self-consciousness, which becomes complexly differentiated, and as it were transmuted, into the more or less restricted self-consciousnesses of the numerically infinite *Jīv-ātmaṅs*, or individual organisms, that result. In a word, the Divine Spirit, *as divine*, becomes gradually more and more conspicuous by its absence, which, however, is only an illusional actuality, not a reality. Herein we chance upon nothing less than the solution of the problem of the origin and nature of what is called *Evil.* Progress along this line of Development—in the shape of organisms that (even though what we style wicked, and injurious to the rest of Creation) ever more and more impress us with their increasing complexity, glorious beauty, tremendous power, and loftiness in the scale of being—is just as inevitable and natural as is progress along any other lines of Development. Hence the appearance in the world, the mysterious fascination, and the astounding triumphs within the limits of their own respective natures and destinies, of organisms and organizations such as the lordly tiger and his kind, Historical Brāhmaṅism, the late Prusso-Germanic Empire, and Bolshevism. In due course, however—*i.e.*, exactly half-way round the cycle of Existence for each *Jīv-ātmaṅ*, the downward or Involutional arc is succeeded by the upward or Evolutional arc : and thenceforward ensues a process the reverse of that obscuration, or self-effacement, on the part of the Divine Spirit, which had theretofore been the dominant feature of Development in Volution. Gradually, as Development along this new stage progresses (concurrently, be it remembered, with the antagonistic operations of the downward arc), the fettering and obscuring conditions and limitations of Existence loosen and fall aside, unfoldment (like that of the petals of a rose) occurs, the self-imprisoned Divine Spirit is released, it becomes manifest, it once more recognizes its own nature for what it really and essentially is, *i.e., Divine.* In short, it is these unfoldments of the *Divinity* that ever subsists in all things, which constitute *E*volution in the only proper acceptation of that word.

But this is not by any means the whole secret of Volutional Existence. Existence means *change—i.e.*, a change, not of *life*, but of that wherein life temporarily and within spatial and causal limits expresses itself:

in a word, *form*. This goes on throughout every moment of what is commonly called the individual organism's "life," *i.e.*, his interests and activities on Earth. In fact, however, Existence, for every such organism, is a much grander and more extensive experience than this so-called "life." That is only a part of Existence. Existence is at least twofold. There is Existence on the *Objective Plane* of the Phenomenal World: and there is also Existence on the *Subjective Plane* of what some regard as the Noumenal World, but which may really be still but another aspect of the Phenomenal World. Pendulum-like, the experiences of the individual organism, or *Jīv-ātmān*, oscillate between these two complementary planes. On this side of the swing, the organism's last and greatest "life"-change is what is commonly called "death." Thereby the organism's life-currents pass from the Objective to the Subjective plane. Ages, perhaps, afterwards, when the time arrives for those same individually polarized life-currents to return to the Objective plane from the Subjective plane, the individual there similarly undergoes on that side a last and greatest "life"-change, which may just as legitimately be also called "death." Otherwise stated, however, "Death" on either plane is nothing but "Birth" on the other plane. In short, as only the form changes, and Life never dies, indeed never can die, there is really no such thing as Death.

But what is the purpose of this eventual and invariable abandonment of the Objective plane of Existence on the part of the *Jīv-ātman*, and flight to the Subjective plane? It is in order that there, on the Subjective plane, may be bridged the mighty gulf which, had the individual organism never "died," would never in fact, and could never possibly, have been bridged during its "life" in any Era or sub-period of Geological time on the Objective plane. In a word, it is just at this point of the argument that we are in a position to see very clearly the soundness of the position for which Mr. George Prentiss, Mr. Das, Professor Agassiz, and, as I fully believe, the original Āryas, if not Mr. Das's so-called "Indo-Āryans," contended and contend so earnestly—*i.e.*, that, even if we excavate and search in archæological haunts till Doomsday and beyond, we shall never find any "missing-link" between say the anthropoid apes and true Man. And this for the very simple and sufficient reason—which however, our scientific "high-brows," with eyes on mere anatomical resemblances, or rather *caricaturas*, their seem resolutely determined to ignore—that no such link exists, or ever has existed, *on Earth*. In other words, never in Earth-life, *i.e.*, on this Objective plane of Existence, and whether on the downward or the upward, the involutional or the evolutional, arc of progress, does the kosmic life-wave ensouling any one distinct type of creature associated with any particular Era or sub-period of Geological time, surge on unbrokenly from Age to Age, and so, by successive procreations, pass continuously from that type to any other later and entirely different kind of type that is supposed to be higher in the scale of "evolutionary" progress.

How, then, is the passage effected? How account for the morphological, physiological, and psychological metamorphoses (sometimes astounding) that *do in fact* [*occur* from Age to Age? For, although we deny that the animal types, say of the Pleistocene, the Pliocene, or the Miocene, are, as Agassiz phrases it, "parentally descended" from those of any preceding Era or sub-period, yet we know for a certainty that the types which roamed the Earth in the Pleistocene were higher in the scale of being than those say of the much earlier Oligocene.

There sources of Life are inherent in its own subsistent self. It builds up its own vehicles of expression: and never does it hesitate to abandon those forms for which it no longer has any use. Also, never does it fail to find or to make other forms that are more suitable for its requirements. Moreover, as Knowledge is for and subordinate to Life, not Life for and subordinate to Knowledge, Life also, by means of its conditions and limitations. fashions for itself whatever faculties—emotional, intellectual, and intuitional—it desires or requires, *i.e.*, whatever faculties are likely to be necessary or expedient for it in the course of its further progress. To some extent this modification and fashioning of faculties goes on during the Earth-life of the individual organism, *i.e.*, on the Objective plane of Existence; yet Life's principal factories in this connection are on the Subjective plane of Existence. The *uses* to which the finished article are destined, are, however, to be found on the Objective plane. When the *Jīv-ātman* "dies" on Earth, when his life-currents stream forth into the Subjective plane, with them are also carried away all his Soul-Knowledge and Mind-Knowledge, and the memory of all his experiences on the Objective plane during the "life" that he has just abandoned. There, on the Subjective plane, these are taken in hand and worked up, according to the laws governing that plane—the former to develop into a different and higher *character* than that which the *Jīv-ātman* possessed when he "died" to the Objective plane, and the latter also to develop into new *faculties*—emotional, intellectual, and intuitional—more efficient than those wherewith he had been functioning before. Thus, when the hour strikes for that individual, or nucleus of polarized life-currents, to return once more to the Objective plane, for the testing of his newly acquired character, and the undergoing of further experiences, from its own inexhaustible resources the Great Artificer, Life, on the occasion of his re-incarnation into a new Earth and a new Age, both vastly different from those which he had functioned in before, itself confers on him that specially prepared morphological, physiological, and psychological vehicle of expression (in plain words, body and mind) which presents him again to the Earth-life, but as a member of one of the types of animal-being which specially distinguish that particular Age (say the Pleistocene sub-period of the Quarternary Era) from the previous Age (say the Pliocene sub-period of the Tertiary Era) during which he had haunted the forests of Africa and southern Asia in the personality of a quite different type of creature considerably lower in the scale of being.

But *how*, it will be asked—indeed, I ask it myself—is this gift bestowed? How are the brand-new types of a definitely recognisable Geological Era or Sub-Period brought for the first time into existence? Possibly some specially appropriate form or forms, surviving from the old vanished Age—the highest theretofore evolved—are somehow utilised for the inauguration of the newly dawning Age, being perchance ensouled in some extraordinary way by the formative and functional activities of the kosmic life-wave now returning to the Objective plane, but which for an indefinite time has been undergoing specially advanced development in the mysterious factories of the Subjective plane. But does not this at once revive and re-introduce the rejected theory of "parental descent," *i.e.*, of a direct lineal connection between the two Ages? Apparently it does; though with a difference, arising from the intervention of the forces of the Subjective plane. The position is obscure: and I confess my inability to clear it up.

These, then, put as shortly and simply as I could, are my reasons for holding with Prentiss, Agassiz, **Mr. Das**, and the Āryas (or the "Indo-Āryans," as the case may be), that the "Evolution Theory," as held in scientific circles in connection with the "Darwinian Hypothesis," fails adequately to meet all the conditions of the problem, and should be rejected.

Yet even so, the force and effect of the quotations which I made a little way back from the works of Professor Wallace, Mr. Carveth Read, and Professor G. F. Scott Elliot, are in no way weakened. They remain as pertinent as ever to what we have in hand. And what do they show? As regards the Miocene and Pliocene sub-periods, they reveal an *Actuality* which is certainly in very striking contrast to Mr. Das's *Dreams*. Even, for the moment, assuming, with the distinguished writers whom I have quoted, that there was some "parental descent" between the faunas that respectively characterised the different Geological Ages and sub-periods, all seem agreed that it is very difficult, if not impossible, to assign the actual transmutation of the anthropoid type into the genuinely human type to any definite epoch, sub-period, or even era. Vaguely we hear of an Eocene "lemur-monkey-man"; of a hypothetical crisis, ingeniously described by Mr. Carveth Read, which may have occurred in the forests of the late Oligocene; of *Homosimius precursor* as possibly associable with the same remote period; and lastly of a "very hypothetical forerunner" at some quite indefinite time during the Miocene—a sub-period which according to European views, began about 3 million years ago, and lasted some 1,400,000 years, and even according to American figures, began no less than 1,250,000 years ago, and lasted 850,000 years. But that is all. We possess really no reliable information about man as a denizen of Miocene Earth. Even as regards the Pliocene—which began, in Europe, about 1,600,000, and, in America, about 400,000, years ago, and lasted, in Europe, some 1,200,000, and in America, some 200,000, years—a mere supposition is hazarded that, before that period closed, the Anthropoid had become Man. What, then, do we see, or think we see, in the Tertiary Era? In the Early Miocene, a world full of non-human animal forms—primates, vertebrates—which, however, in physical structure, so nearly approximated to Man (Macnamara speaks of 170, and again of 150, common structural characteristics), that scientists have gone the length of bestowing on them the name of Anthropoids, or Man-like Apes. By the mid-Miocene, these resemblances had increased to 300. The Ape had become very much more Man-like. In the Upper Miocene this weird denizen of Earth, now more or less visualized as a chimpanzee-like creature, had developed into a plantigrade. And what is the picture that we are asked to look at in the Mio-Pliocene, the Pliocene, or even the early Pleistocene sub-period of the Quarternary Era? A world not even yet knowing aught of Man, as we now understand the word, save for swarms of quaint little creatures that are called "pygmy races"—but still full of the above extraordinary plantigrades—all, including even the "pygmies," migrating from south to north, across the regions, now arid and desert-like, extending from the western coasts of Africa to the frontiers of India: but somewhere, *en route*, bifurcating into separate streams, one of which poured south-westward, back again to Africa, and the other south-eastward into Indo-Malaya.

Thus, although, with Prentiss, Agassiz and others, we reject the teaching that, on this Earth, *i.e.*, on this Objective plane, there was ever any direct lineage between the faunas of one Geological Age and the entirely different and superior faunas of any later Geological Age—and in particular between the Anthropoid Apes say of the

Miocene or early Pliocene and Man (whenever he in fact appeared), yet it is impossible for us to shut our eyes to the fact, which indeed stares us in the face, that up to at least Mid-Pliocene times, and perhaps even later, Man had not made his *début* on the stage of Terrestrial life, or, if he had, then, as a denizen of Earth, he assuredly sustained a very minor and obscure *rōle*.

Here, however, I can imagine Mr. Das breaking in with the protest—"But surely we may admit all this about the Anthropoids, and *yet* maintain, as I do in *Ṛig-Vedic India*, that it is not, at least not necessarily, inconsistent with an averment that the 'Indo-Āryans' of the Ṛig-Veda (the Pūrūs, Yādūs, Tūrvaśas, Aṇūs, Drūhyūs, etc.) were even then dwelling dignifiedly in Sapta-Sindhū—say in the Siwālik Hills—as representatives, not merely of Man (that were a small thing to allege), but of *highly civilized Man*!"

I much fear that, in this connection, something in the nature of a shock awaits Mr. Das.

The far-famed Siwālik Hills can be seen from Mussoorie, stretching away into the haze of the plains west of Dehra Dūn. Roughly speaking, they lay in the north-east corner of old Sapta-Sindhū. In his book Mr. Das repeatedly mentions them; and he seems particularly anxious that we should be impressed with the vastness of their stores of extinct mammalia, possibly associable with the Pliocene. Indeed, with considerable emotion he invites our attention to the fact that Sapta-Sindhū, or at least this portion of it, has been proved by geologists to be the *oldest life-producing region in India* (pp. 20, 23). About this last idea, we shall inform ourselves more fully later on. But alas—even if Mr. Das's claims are bounded by the limits of the Pliocene—those were the days, as we have just been seeing, when the world was essentially the hereditary property, in possession, of a swarming host of Anthropoids! And with regard in particular to the

Siwāliks—on which so much stress has been laid by Mr. Das—it happens that in those days (certainly up to as late as the Early Pliocene) these hills were *a specially notable stronghold of these extraordinary creatures!*

The mental process, purporting to be an argument, by which Mr. Das is content to arrive comfortably at the conclusion that these Siwālik Anthropoids of the Pliocene were human-beings, nay even highly civilised human-beings, indeed none other than the " Indo-Āryans " referred to in the *Ṛig-Veda* under the names Pūrūs, Yādūs, Tūrvaśas, Anūs, Drūhyūs, and so forth,—for I do not understand him really to maintain that "Indo-Aryans" and Anthropoids *shared* Sapta-Sindhū together—is curious. Let us set it down in stages.

1. First appearance of Man on the Earth, really unknown. Comparatively recent, but positively so remote that it has been estimated at between 20 and 100 thousand years ago.
2. This, however, is only the *minimum* of "the cautious scientist." For Mr. Das, the *maximum* remains undetermined. He therefore refuses to be bound by anything except his own logic and convictions.
3. Both Geological and Archæological evidence of the *existence* of Pliocene Man *in the Indian Peninsula.* Reference to gravels of Narmada and Godaveri, with a few fossilized Siwālik mammalia in the former, associated with species more nearly allied to modern species. Resemblance between Siwālik faunas and faunas of European Miocene. Clipped flint in Upper Miocene deposit in Further India.
4. All this appropriated as evidence in favour of a human and Āryan and highly civilized Sapta-Sindhū in those days. Thus—

5. *If* Man is proved to have *existed* during Miocene in Indian Peninsula and Further India, then, since these were connected by land, "it is equally certain that he also existed in the same epoch in Sapta-Sindhū, which has been proved by geologists to be the oldest life-producing region in India." On another line of thought Mr. Das fervently emphasizes what he says was the fact, that Sapta Sindhū and Southern India were absolutely cut off from each other.

6. It follows that there, in Sapta-Sindhū, the evolution of animals and the appearance of Man *must have been far earlier*.

7. *If* the Indo-Aryans were autochthonous in Sapta-Sindhū, they *must* also have passed through all primitive stages of development. The fact that Ṛig-Veda makes no mention of these primitive stages may be neglected, as of no importance, because the *Samhitā* does refer to the use of iron. Hence, "Ṛig-Vedic Āryans had long ago passed through those stages." (pp. 22, 23.)

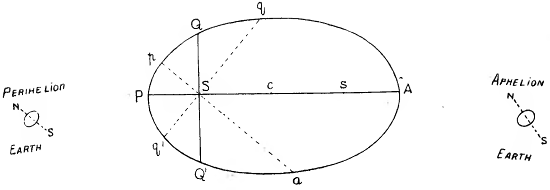
8. Therefore (grand conclusion), "there can be no doubt that the Indo-Āryans lived and flourished *as a civilised people*" (my italics) "in the Miocene or Pliocene epoch" (p. 22)—of course, *bien entendu*, in Sapta-Sindhū!

Even for the moment accepting the statement that Sapta Sindhū, or more precisely the Siwālik Range, is one of the oldest—Mr. Das says "the oldest"—life-producing regions in India, what follows, on the further evidence that I have adduced? Surely this, that the specific life-forms which were actually in possession of the region (say in the

Early Pliocene), consisted of that branch of the eastwardly trending group of migrant Anthropoids who eventually settled there. In these circumstances, is it *likely* that Man dwelt there then with these Anthropoids? The supposition that he existed then, is *only* a supposition. Certainly it does not emerge from any particular preliminary premisses known to us, as a fact necessarily revealed by them. Even, however, granting that Man did *exist* there then, the further conclusion that he was *not only civilized, but even highly civilized*, and indeed none other than the so-called "Indo-Āryans" mentioned by name (according to Mr. Das) in the *Rig-Veda*, is an absolute *non-sequitur* of a somewhat glaring type, and a perfectly gratuitous assumption. I do not doubt that Mr. Das is sincerely convinced, not only that his logic is flawless, but also that his conclusions really flow from his premisses and are irrefutable. At any rate, he has all the appearance of being thoroughly satisfied with the kind of reasoning that he has chosen to adopt. The impression, however, that is left on my mind, as I follow his mental meanderings and convolutions, is that they are an elaborate and syntactically subtle but self-deluding attempt, by special pleading touched at times by emotion, to make out a case which, from the very outset, he was quite determined *should* be made out, so far as he felt himself capable of achieving that end.

Frankly, I do not think Mr. Das has succeeded. I have given some of my reasons for this belief, and I have a good deal more to say in support of it; for there are many other aspects of this most interesting subject and (with all its defects) this most interesting book, upon which I have not yet touched: but further comment must be reserved for some future occasion.

I notice that, throughout the work, Madame Zénaide A. Ragozin, of "The Story of the Nations" fame, is always referred to by Mr. Das as "Mr. Ragozin"; and also that "Bosphorus" is invariably spelt "Bosphorous"—small errors which, no doubt, will receive attention when the second edition of *Rig-Vedic India* comes out.


PERIHELION
N
S
EARTH
Q
q
p
P
S
c
s
A
q'
Q'
a
APHELION
N
S
EARTH

Aryanism and the Rig-Vedic Age

BY

H. BRUCE HANNAH.

III

Our subject—Āryanism and the Āryas—is a very big one: and, before proceeding to consider how and to what extent it is affected by the fact now alleged, that once upon a time Sapta-Sindhavaḥ was surrounded by no less than four oceans, or seas, more or less vast and distant, vaguely referred to in the *Ṛig-Veda*, and that, in particular, say some time late in the Tertiary Era, Rājputāna was covered by a *samūdra*, in the sense of a genuine sea, also vaguely hinted at in scattered *Ṛig-Vedic* texts, there is a good deal of preliminary spade-work to be done. I have already glanced at the doctrine of "Evolution," as understood by the Darwinian school of thought. This I have rejected, as, although it is undeniable that the forms of life show a gradual but steady development and improvement along certain main lines, from their earliest simple beginnings up to the elaborately complex unities of modern times, still, in connection with the various successive geological Ages, and the life-forms specially associable with each, we find that the life-forms of one Age are, for the most part, *entirely different* from those of preceding Ages, and that, so far as concrete, or otherwise objective, evidence goes, there is nothing—*e.g.*, by way of "parental descent," or "direct lineage"—to reveal to us *how the higher faunae of one Age* (say the Miocene sub-period of **the Tertiary** Era) *transmuted themselves, or were otherwise changed, into the higher faunae of the succeeding Age,* **say the** Pliocene sub-period of the Tertiary. **As already remarked, I** incline to agree with Agassiz and others, **that there** never was any such **transmutation—at least on the Objective** plane, as expressed in Terrestrial Existence. **Darwinism** asserts that there was; **though hitherto, despite its ultra-scientific** setting, it **has apparently failed to establish its** contention, which, to this day, remains **a** mere *ipse dixit,* wriggling sturdily amidst a teutonically mountainous collection of curious facts and more or less ingenious arguments. For instance, with regard to the **first** appearance on Earth of veritable *Genus Homo,* we are told by Darwinists that he is descended from some family of the Anthropoid Primates (so-called because of **their** many formal and functional resemblances to Man); **but,** when we request inspection of the pedigree, they **can** produce nothing in the shape of convincing evidence, either to prove beyond **a** doubt, nay many doubts, that there was in fact a transmutation from Anthropoids to Man, or to indicate, even within the limits of a geological sub-period, not to say Era, when, where and how any such transmutation occurred. Practically all they possess in the way of armature (over and above the courage of their convictions) consists in the accumulated facts and inferences of Darwinism, the later facts of Ontogeny, and the conclusions which scientists now draw therefrom. I submit that the reason why the "Missing-Links" that are indispensable for the imaginary chain of being propounded in the Darwinian Hypothesis have never yet been discovered, is that they do not exist, and never have existed, on the Objective plane. I suggest, however, that the solution of the mystery surrounding these successive inter-æonic transmutations, is really to be sought for on the Subjective plane of being, and that what is effected there in the character- and faculty-factories of the Kosmos, only finds concrete expression in Earth-life, *i.e.*, on the Objective plane, when the *Jīv-ātman*, or individual organism, returns to that plane for purposes of re-incarnation. Even so, we are still confronted with a difficulty. On the physical and mental plane, re-incarnation is carried out under the laws natural to that plane. In other words, the returning *Jīv-ātman* has to make use of the concrete life-forms there already in existence, and of the processes of procreation whereby their types are re-produced. From this it would seem to follow that the "Evolution" doctrine of the Darwinists cannot wholly be rejected, since our choice *seems* to be restricted within the limits of their Anthropoids. In my last paper I said that the position was obscure; and I confessed that I did not see how it could possibly be cleared up. I do not now feel so pessimistic. Readers of Hæckel will, remember the plates in his *Evolution of Man* wherein he gives representations of the embryos of the Fish, the Salamander, the Tortoise, the Chick, the Hog, the Calf, the Rabbit, and the Human infant, in three stages of their development to fœtal maturity. For each stage they are all given in a line, in the above order. Examined carefully, even in the first stage—the simplest—there are noticeable differences: but at a first glance, looked at casually, they all seem practically alike. In the second stage the differences are more readily apparent. In the last stage each of the embryos is easily recognizable for what it is. Now, from an Ontological standpoint, let us assume that there was once a stage, even earlier than that supposed in Hæckel's plate, at which all these embryos were outwardly exactly alike. Notwithstanding that general resemblance, and with our knowledge of what, as a matter of fact, each embryo invariably ultimately develops into, may we not (passing now to Phylogeny) suppose that *originally*, and with reference to their respective morphological and physiological destinies, the *race*-forms represented by these eight embryos, as also the eight embryos themselves, were *essentially all absolutely different from each other?* In other words, may we not reasonably assume that, in the life-forces which, from start to finish, give impetus, sustainment, and direction to, in fact govern, the development along exclusive lines of each embryo and the race to which it belonged, there lurked a mysterious and omnipotent *something* which was the peculiar possession of each, and which none of the other embryos and races possessed? Something, in short, from which it followed that no single fœtus, amongst the eight depicted in connection with stage I, could by any possibility wander away from its own line of development, into that exclusively belonging to any of the other seven embryos? That is, that every such fœtus *is bound* to develop along, and only along, that line which, in fact, results in its appearance as the particular matured embryo given under a special name in the third and last of the 3 stages depicted in Hæckel's plate? We know that the processes of Ontogeny are only a recapitulation of those of past Phylogeny. Whether Fish, Salamander, Tortoise, Chick, Hog, Calf, Rabbit, Man, or anything else—the *race* must once have passed through every one of the stages of development through which we see that the *embryo of its own individual organism* passes. Hence, say away back in the distant and misty days of the Cambrian sub-period of the Palæozoic Era, or at whatever time organic life-forms made their first appearance in the shallow seas that then covered portions of the Earth, the earliest and most rudimentary formal and functional beginnings of the *races* to which the above eight *embryos* belonged must all have been represented. In those days, no doubt, outwardly they all so much resembled each other that, could we have been there to look at them, it would have been impossible for us to distinguish the representatives of one race from those of any other. Possibly they appeared to be what is technically called "undifferentiated." Yet, in reality, the organic representative of each—as distinctively Fish, Salamander, Tortoise, Chick, Hog, Calf, Rabbit, or Man—was there. Each, even then, was an individuated centre of specially polarized life; because, in the innermost depths of the nature of each was *hidden* the secret of its own essential life-forces, and the fact of its ultimately different, special, and ineluctable destiny. The same remarks apply to these and all races, throughout every one of the geological Ages that were to succeed, right up to now. Another point to notice is that, while, in remote archæan times, the earliest beginnings of life, however essentially heterogeneous, were all outwardly very much alike, so, after the lapse of ages of development in volution (each race along its own exclusive lines), the more highly developed non-human races (as Agassiz observed) exhibit an increasing similarity to one another; nay, the increasing resemblance, formally and functionally, of the higher vertebrates to Man, is also and especially noticeable. Is it not reasonable to assume that, say sometime towards the end of the Pliocene sub-period of the Tertiary Era, some type of organic vertebrate life existed on Earth which (however strikingly, from a Darwinian point of view, it may be said to have resembled the Anthropoids of the Pliocene), was not only essentially different from those Anthropoids, but was also possessed of a different destiny—that destiny which had been hidden in its nature ever since say the Cambrian sub-period—the certainty that eventually it would develop into what, as surely, the Anthropoids proper never could and never would develop into, namely, Man? Finally, then, I suggest that it was of this particular and intellectually segregable type of Pliocene organic life that the *Jiv-ātmans* above referred to, returning to the Objective plane from the **Subjective** plane, made use for re-incarnational purposes,' and so gave rise to "Man," as he eventually appeared, say in the early Pleistocene sub-period of the Quaternary Era, or possibly earlier. Thus, the Anthropoids proper were not really utilized at all. Glancing, lastly, at some of the more recent expressions of scientific opinion on the subject of Evolution, regarded from the Darwinian standpoint, mention may be made of the fact that, only the other day, when beginning a series of lectures on *The Origin of Man* at the Royal Institution, Albemarle Street, London, Professor A. Keith, after reminding his audience that Darwin's famous book, "The Descent of Man," had now been before the world for 50 years, and that they were really then celebrating the Jubilee of the Darwinian Theory, stated (*inter alia*) that when Darwin was formulating his theory our knowledge of the secrets of Ontology was imperfect. Nowadays, thanks to an improvement in our methods and the labours of hundreds of embryologists, the developmental stages of the history of Man were well known, at least in their main outlines. Perhaps the most remarkable advance that had been made related to the similarity of the constitutions of Man and the Anthropoids, and to our new ideas connected with certain glands in the body—pineal, pituitary, thyroid, and supra-renal—which control the growth and functionings of its various parts. If, declared the Professor, Darwin were now alive and contemplated re-editing "The Descent of Man," with the accumulated evidence of the last 50 years before him, it would not be necessary for him to re-cast his theory; only to modify and amplify it in certain details.

On the other hand, there are scientists, by no means obscure—*e.g.*, Professor Giuffrida-Ruggeri—by whom the claim of the Orang-Utan and the Gorilla to any participation in the scheme of human ancestry is still most energetically combated; though in Professor Klaatsch—who, up to 1908, was amongst the foremost of those demanding their absolute exclusion from the pedigree—these aristocratic simians appear lately to have gained an adherent (*Prehistoric Man*, by W. L. H. Duckworth, M.A., M.D., Sc.D., Cantab., pp. 138, 140). Nevertheless, remarks Dr. Duckworth—

> "Up to a certain point, the evidence is strikingly favourable to the hypothesis of human evolution. By this is meant the gradual development of the modern type of skeleton found in association with a large and active brain, capable of manifesting its activity in a great variety of ways" (*Ibid*, p. 127).

It should be explained, with reference to the phrase 'Up to a certain point,' that in his *Preface* Dr. Duckworth states that the selected period in connection with which alone he has dealt with the evidence, both stratigraphical and palæontological, referred to and commented upon in his booklet, ends at the Aurignacian division of the Palæolithic Age.

But, besides Evolution and the mystery still surrounding Man's first appearance upon Earth, even as explained by the Darwinists, there is yet another subject some understanding of which will prove of assistance to us in our present attempt to solve the various problems that are connected with Āryanism and the Ṛig-Vedic Age; and that is involved in the question—"What was the cause of the Ice-Ages and the Inter-Glacial Ages?" For, though no one seems very sure how many such Ages there were, all geologists are agreed that there were more than one. In his *Arctic Home in the Vedas*, at p. 23, Mr. Bāl Gangadhar Tilak states that various indications clearly reveal that—

> "at one period in the history of our globe the northern parts of Europe and America must have been covered for a long time with a sheet of ice several hundreds of feet in thickness. The ice which thus invaded the northern portion of America and Europe did not all radiate from the Pole. The evidence of the direction of the striae, or scratches engraved on rocks by ice, undoubtedly proves that the ice-caps spread out from all elevated places or mountains in different directions. These ice-sheets of enormous thickness covered the whole of Scandinavia, filled up the North Sea, invaded Britain down to the Thames valley, the greater portion of Germany, and Russia as far south as Moscow and almost as far east as the Urals. It is calculated that at least a million of square miles in Europe and more in North America were covered by the *débris* of rocks ground down by these glaciers and ice-caps, and it is from this *débris* that geologists now infer the existence of an Ice Age in early times. The examination of this *débris* shows that there are at least two series of boulder clay, indicating two periods of glaciation. The *débris* of the second period has disturbed the first layer in many places, but enough remains to show that there were two distinct beds of boulder clay and drifts, belonging to two different periods. Prof. Geikie mentions four such Glacial periods, with corresponding Inter-Glacial periods, as having occurred in succession in Europe during the Pleistocene period. But though this opinion is not accepted by other geologists, yet the existence of two Glacial epochs, with an intervening Inter-Glacial period, is now considered as conclusively established."

In his *Ages of Ice and Creation*, at p. 239, Mr. George Prentiss informs us that—

> "Professor Scott, a standard authority, says: 'The cause of the climatic changes which led up to the Glacial Epoch, and to the later disappearance of the ice-sheets, are still wrapped in mystery. Many attempts have been made to solve this most difficult problem, but none is convincing or satisfactory.'
>
> "James Geikie, in that great work, 'Great Ice Age,' reviews the various theories advanced to account for these phenomena, and remarks that none of them are satisfactory."

In *Man and the Glacial Period*, by Professor G. Frederick Wright, D.D., LL.D., F.G.S.A., at p. 113, we are told that—

> "The predominant cause of the Glacial period was probably a late Tertiary or post-Tertiary elevation of the northern part of the continents, accompanied with a subsidence in the central portion."

Of these various guesses, or attempts, at a solution of the problem, there are two which stand out prominently from all the others. One is Sir Charles Lyell's theory which, according to Mr. Tilak—

> "explains the changes by assuming different distributions of land and water combined with sudden elevation and submergence of large land areas "......" Lyell's theory has been worked out by Wallace, who shows that such geographical changes are by themselves sufficient to produce the heat and cold required to bring on the Glacial and Inter-Glacial periods."......" Great elevation and depression of extensive areas can be effected only in thousands of years, and those who support Lyell's theory are of opinion that the duration of the Glacial epoch must be taken to be about 200,000 years."......" But there are other geologists of the same school who hold that the Glacial period may not have lasted longer than about 20 to 25 thousand years. The difference between the two estimates is enormous! but in the present state of geological evidence it is difficult to decide in favour of any one of these views. All that we can safely say is that the duration of the Pleistocene period, which included at least two Glacial and one Inter-Glacial epoch, must have been very much longer than the period of time which has elapsed since the commencement of the Post-Glacial period" (*The Arctic Home in the Vedas*, pp. 26, 27).

This, according to what he calls the latest geological evidence, Mr. Tilak puts at about 10,000 years ago, or 8,000 B.C. at the best (p. 37).

But perhaps the most interesting theory of all is that of Dr. Croll, author of *Climate and Time* and *Climate and Cosmology*. The accompanying diagram will help us to understand it.

P Q′ A Q represents the elliptical orbit of the Earth—though purposely exaggerated. The Sun is not at c, the centre of the ellipse, but at S, one of the two foci. P is Perihelion, with Winter in the northern hemisphere of Earth. A is Aphelion, with Summer in the northern hemisphere. But the Seasons are not always so placed on the orbit. Precession of the Equinoxes causes them slowly to move from point to point right round it, in the same direction as that taken by the hands of a clock. Hence, Winter might be at p, Summer at a, and the Equinoxes at q q′. Or Winter might even be at A: in which case Summer would be at P. Meanwhile, the Sun remains assumedly at focus S. Therefore, when Winter is at A, it would be ever so much longer and severer than when at say P. With reference to Precession, the entire orbit represents a period of $25{,}868\frac{44}{167}$ years. Hence, a Winter at A would occur once every $12{,}934\frac{22}{167}$ years. Tilak puts it at 10,500 years, in round numbers. He gives 25,868 years as the duration of the Precession Cycle. But, he adds, it is found that the Perihelion and Aphelion points (and therefore *all* points along the orbit ?) have a small motion of their own in the direction opposite to that of the Precession movement. This, he says, reduces the 25,868 years to 20,984 years, or in round numbers 21,000 years, of which half=10,500 years (p. 29). Then, after the lapse of a further $12{,}934\frac{22}{167}$ (or 10,500 ?) years, Summer would recur at A, and Winter once more at P. Or, if the period were shorter, Summer would be at q, or only at Q, or yet again only at p; while similarly, Winter would be at q′, or only at Q′, or yet again only at a—according to the period actually elapsed. The ellipticity of the Earth's orbit is measured by the difference between the mean and the greatest distance of the Earth from the Sun. This is technically called the Eccentricity of the Earth's orbit. It varies, making the ellipticity greater, until it reaches a maximum, when it recedes to original value. Hence the duration of Summer or Winter in a hemisphere varies as the value of this Eccentricity. The durations of Summer and Winter thus show the greatest difference when the Eccentricity is at its maximum and according as Winter and Summer occur at Perihelion or Aphelion. The greatest has been calculated at 33 days. Now it is said to be about 7½ days. About A.D. 1250 Winter in the northern hemisphere is said to have occurred when Earth was at P. Thus, explains Tilak—

> "If the winter in the northern hemisphere occurs when the earth is at P in its orbit and the eccentricity is at its maximum, the winter will be shorter by 33 days than the summer of the time. But this position will be altered after 10,500 years when the winter, occurring at A, will, in its turn, be longer than the corresponding summer by the same length of time, *viz.* 33 days" (*Arctic Home in the Vedas*, pp. 27-31).

It would seem, however, that since, according to Kepler's second law, the straight line joining a planet to the Sun sweeps out equal areas in equal times, and therefore the Earth describes equal areas during its passage along both halves of its orbit—the one beginning at the Spring Equinox, with Summer half-way, and the other beginning at the Autumnal Equinox, with Winter half-way—so during the shiftings of Aphelion along that half of the Precessional Cycle of 21,000 years which, on the above diagram, begins at Q, and goes round the ellipse past A till it arrives at Q′, the Earth receives from the Sun the same total amount of heat as it receives during the similar shiftings of Perihelion along that other half of the same Cycle which begins at Q′, and goes round the ellipse past P till it arrives at Q. This is what Herschel supposed, adding the remark—

> "The inequality in the intensities of solar radiation in the two intervals being precisely compensated by the opposite inequality in the duration of the intervals themselves."

But this, it is said, is not quite correct. Taking the total sun-heat received annually by each hemisphere to be 365 units, or on an average 1 unit per day, and the obliquity of the earth to be 23° 27′, Sir Robert Ball calculated that each hemisphere would receive 229 of these heat-units during Summer, and only 136 during Winter, whatever the Eccentricity might be. Hence he submitted that the total heat received annually by each hemisphere in Summer and Winter varies as the obliquity of the Earth, or the inclination of its axis to the ecliptic, but is practically independent of the Eccentricity of the orbit. On this Mr. Tilak comments as follows—

> "But though these figures are not affected by the eccentricity of the orbit, yet we have seen that the duration of the summer or winter does vary as the eccentricity. Supposing, therefore, that we have the longest winter in the northern hemisphere, we shall have to distribute 229 heat-units over 166 days of a short summer, and 136 heat-units over 199 days of a long winter of the same period. In other words, the difference between the daily average heat in summer and winter will, in such a case, be the greatest, producing shorter but warmer summers and longer and colder winters; and ice and snow accumulated in the long winter will not be melted or removed by the heat of the sun in the short summer, giving rise thereby to what is known as the Glacial period in the northern hemisphere." "In short, the Glacial and Inter-Glacial periods in the two hemispheres will alternate with each other every 10,500 years, if the eccentricity of the earth be sufficiently great to make a perceptibly large difference between the winters and summers in each hemisphere" (*Ibid*, pp. 31, 32).

Dr. Croll, however, went even further than these speculations. He attempted to compute the values of the Orbital Eccentricity for particular periods. Thus, taking the value of the Eccentricity from Leverrier's tables, he calculated that—

> "during the last 3 million years there were 3 periods of maximum eccentricity; the first of 170,000, the second of 260,000, and the

third of 160,000 years ; and that 80,000 years have elapsed since the close of the third or last period. According to Dr. Croll the Glacial epoch in the Pleistocene period must, therefore, have begun 240,000 years ago, and ended, followed by the Post-Glacial period, about 80,000 years ago" (*Ibid*, pp. 32, 33).

Sir Robert Ball, however, fights shy of all calculations regarding Eccentricity, and, in view of the present state of our knowledge, says he cannot tell when the last Glacial epoch took place, or when the next may be expected. Also, Professor Newcomb of New York is of opinion that the value of the Orbital Eccentricity depends on elements many of which are quite uncertain, especially when we are dealing with long geological eras. This objection, observe, strikes at the very data on which Croll based his calculations of the chronological place of the Ice-Age, not at the correctness of his arithmetic

Certain American geologists decline to put the beginning of the Post-Glacial period further back than about 10,000 years ago, basing this on estimates of valley-erosions that have been going on since the close of the last Glaciation. Of course, however, this view may be quite sound as regards the later Ice-Age in North America, and yet conflict with the conditions characterizing the Ice-Age in North Europe, which were different.

Perhaps the best way of regarding the Croll theory (which is certainly attractive, and has never yet been upset, save in connection with the further calculations above noticed) is to agree with Professor Wright when he says—

"Whatever may be said in support of the theory that the Glacial period was produced by astronomical causes" (meaning the shiftings of the Equinoxes, etc.), "in view of present facts those causes cannot be regarded as predominant ; at most they were only co-operative" (*Man and the Glacial Period*, p. 112).

Before passing from the Croll theory to other considerations, it will at least be amusing, and perhaps even instructive, to note how Mr. Prentiss, author of *The Ages of Ice and Creation*, comments upon it. After briefly describing the theory as resulting in the conclusion that once in about 11,000 years ice, mountains high, accumulates at the South Pole, and stating that the ice thus accumulated there must be mountains high now, he says—

> "But 'what a fall was there, my countrymen,' when Roald Amundsen returned and reported—not ice sky high—but a level, snow-covered plain but little above the level of the sea at the south pole, where he planted King Haakon's flag.
>
> From Europe came the despairing cry, 'across the stormy waters'; from the scientists, 'Amundsen has smashed Kroll's theory,' and he sure had.
>
> There was not enough left of it to hold a funeral over" (pp. 238, 239).

Against this we have the fact that the greater part of Antarctica is mountainous land, considerable parts of which rise to an altitude of about 10,000 feet above sea-level (*Text-Book of Geology*, by Pirsson and Schuchert, p. 463), and the testimony of other explorers. For instance, Sir J. C. Ross sailed for 450 miles in front of a precipitous wall of ice 180 feet high, in a region about 20° from the South Pole.

Mr. Tilak's summing-up is as follows—

> "Independently of the eccentricity of the earth's orbit, the occurrence of winter at aphelion is by itself sure to contribute to the production of the ice age, if other causes and circumstances, either those suggested by Lyell or others, are favourable, and 21,000 years must elapse between two successive occurrences of winter at aphelion. For two Glacial epochs with an intervening Inter-Glacial period, we must, therefore, allow a period longer than 21,000 years, even if the question of the eccentricity of the earth's orbit be kept aside; while if, with Prof. Geikie, we suppose that there

were five Glacial (four in the Pleistocene and one at the close of the Pliocene period) and four Inter-Glacial epochs, the duration must be extended to something like 80,000 years" (*Arctic Home in the Vedas*, p. 36).

To a great extent, if not mainly, says Professor Wright, after reviewing the evidence available up to 1892, the Glacial Periods, or Ice-Ages, were caused by gentle rhythmical oscillations of the crust of the Earth, occurring over extensive areas, and relieved by the folding and mashing together of strata along the lines of least resistance now occupied by the mountain-systems and once by oceanic geosynclines. One hundred thousand years, or even less, might easily include both the slow coming-on and the rapid close of a Glacial Period. After making all reasonable allowances, Prestwich's conclusion, that 25,000 years is ample for the reign of ice during such a Period, cannot be regarded as by any means incredible, or, on *à priori* grounds, improbable (*Man and the Glacial Period*, pp. 329, 364). It should be added, however, that more recent investigation has disclosed a vast amount of evidence showing that, some time early in the Permian sub-period of the Primary or Palæozoic Era, glacial formations of a severe type extended over enormous areas on either side of the equator from about 20° to 35° north and south latitudes—though mostly in the southern hemisphere, in what is called "Gondwanaland," and noticeably in the Aravalli region of India, which then lay in "Gondwanaland"—with corresponding Inter-Glacial Ages; nay, that, as far back as what American geologists call late Proterozoic, and even in earlier Proterozoic, times (equating with our old Archæan or Eozoic Era), there had also been widespread Glaciations, with corresponding intervals of a warm character. Indeed, we may now reasonably conclude that Ice-Ages and Inter-Glacial Periods have been periodically recurrent ever since the disappearance of the world-wide, warm, equable, edenic climate referred to some little way back. All the foregoing, in spite of the many differences of opinion that are revealed, may be regarded as a consideration of the subject—the Cause of the great Ice-Ages—from the varying points of view of the recognized scientific world. I now proceed to state and comment upon a theory which, by that orthodox and still pontifical world, will doubtless be denounced as heterodox. In 1915, in Chicago, there was published an extraordinary book, entitled *The Ages of Ice and Creation*, by George Prentiss. As a literary production, from an English and European point of view, it is atrocious—being full of irritating repetitions, and, worst of all, being written in a free and easy, unconventional and carelessly ungrammatical style, which is sure to shock many of its readers; in short, in a kind of breezy American vernacular, apparently adopted in order that it may get "right home" and be readily "understanded of the people" over there. Nevertheless, for its clearsightedness, its straight-speaking, its strong and abounding common sense, and as a convenient store-house of most of the more important facts and arguments connected one way or another with the problems wherewith we are confronted, it would be hard to beat. Indeed, as a broadminded, intelligent, and forcible attempt to break up and disperse the dense clouds of mystery that have hitherto enveloped the Ice-Ages and their corresponding Inter-Glacial Periods, and the cause or causes that gave rise to them, it seems to demand our most serious attention.

It is first necessary, however, to remark that Mr. Prentiss appears to know nothing of the mighty Glaciation that, as already noticed, occurred in equatorial regions, and particularly in southern latitudes, sometime during the Permian sub-period of the Primary or Palæozoic Era.

In Pirsson and Schuchert's *Text-Book of Geology*, we read—

> "Geologists now know of seven periods of decided temperature changes (earliest and latest Late Proterozoic, Silurian, Permian, Triassic, Cretaceous-Eocene, and Pleistocene) and of these at least four were glacial climates (both Proterozoic times, Permian, and Pleistocene). The greatest intensity of these reduced temperatures varied between the hemispheres, for in earliest Late Proterozoic and Pleistocene time it lay in the northern, while in latest Proterozoic and Permian time it was more equatorial than boreal" (p. 985).

We must therefore read what follows in the light of this further information.

Away back in the beginnings of geologic time, says Mr. Prentiss, when first the once incandescent and fluid Earth had begun to cool and solidify, there were no mountain-ranges, and no deep and far-reaching deposits of stratified rocks or anything else—*e.g.* no layers of iron-ore and other metalliferous substances, all by themselves, no layers of coal in beds by themselves, no layers of pure marble and granite, no layers of assorted limestone by themselves—only illimitable wastes of flat, vitreous, once molten rock, with numerous extensive but very shallow and placid-looking seas, lying scattered about upon its silent, lonesome surface. Moreover, in those far-off times, when light first began to filter through the thick perpetual clouds that then, as it were, blanketed the entire globe, and animal and later plant-life commenced, a warm, uniform, edenic climate prevailed almost from pole to pole, all over the Earth, and thenceforward endured for scores of millions of years, throughout succeeding Ages, right up to the opening of the Pleistocene sub-period of the Quaternary Era. (Let us now substitute Proterozoic Era for this). All through those well-nigh sempiternal æons it was a windless world; and—mark this well—there were no climatic zones such as those with which we are now familiar.

Then—towards the close of geologic time, *i.e.*, during the first half, or quarter, of the Pleistocene sub-period of the Quaternary Era, or perhaps even at the end of the Pliocene sub-period of the Tertiary (really Proterozoic) Era—there occurred the most stupendous and astounding change Earth, since her incandescent days, had ever known. Suddenly, the warm equable edenic climate which, for countless millions of years, had enveloped the globe almost from pole to pole, disappeared, and was succeeded by an era of bitterest cold, also nearly world-wide; for, from the Temperate regions in the North, downwards almost as far as the present Antarctic Circle, the Earth was buried under immense sheets of ice, in places a mile or so thick.

How long this first Ice-Age lasted, nobody knows: but eventually there came a return of the old warm uniform edenic climate, extending again nearly from pole to pole, and giving rise to what is termed an Inter-Glacial Age.

There were several of these mighty successive changes: how many, investigation has never yet been able to discover: but it is believed that there were four or five of them—*i.e.*, according to most geologists, four Ice-Ages, for Europe, in the Pleistocene sub-period, and, according to Professors A. Geikie and Boule, one Ice-Age at the end of the Pliocene sub-period, together also, of course, with their corresponding Inter-Glacial Periods. As we have seen, these are now put at seven; and they begin in our Primary, if not in our Archæan, Era.

The mystery that we all want to see unveiled is that which will cease to exist when, but only when, a satisfactory answer has been given to the question, "What was it that occasioned the sudden and tremendous revolution in the age-long conditions of Earth above referred to?" In *The Ages of Ice and Creation*, Mr. Prentiss claims that he has produced such an answer: and I rather incline to think that he has made good his claim, or at least that it probably will be established when the ideas to which he has given crude and badly arranged expression have been further developed, carefully co-ordinated, and clearly set forth in language that is no longer a wilderness of frequently recurrent solecisms and Trans-Atlantic buffooneries.

Among those competent to judge, there are, or once were, many who hold, or held, the opinion that the entire space now occupied by the Sun and its dependent family of planets and other celestial bodies—indeed, much more than that area—was originally filled by a vast rotating Nebula, a mass of intensely heated vapour, which, as it cooled by radiation, gradually polarized towards its centre, where it contracted into an incandescent nucleus (now the Sun), which held everything else in its gravitational grip—leaving, however, behind it, in the deserted regions of surrounding space, yet still subject to its sovereignty, a succession of enormous concentric rings, probably resembling those of Saturn (and, as has actually been suspected, Neptune), though on a much larger scale, but since broken up into the 8 planets, etc.,—and thus eventually developed into the Solar System as we see it now. Touching lightly upon this *Nebular Hypothesis*, as it is usually called, Mr. Prentiss asks us to lift up our eyes and contemplate the wonders of the heavens—more especially those two mighty and extraordinary orbs, the planets Saturn and Jupiter.

Saturn is some 74,000 miles in diameter, 872,137,000 miles distant from the Sun, and revolves round that orb in 29½ of our years. Its ring—reminding one somewhat of the flat halo-like circle of linen-covered material which contributes to the make-up of the Calcutta khidmatgar's head-gear—is so comparatively thin that it vanishes from view when the Sun is in such a direction that it only shines on the ring's edge, as, for instance, was the case in 1848, and again in 1862. The plane of this ring remains ever in the same direction, and inclines to the ecliptic at an angle of nearly 37°. Hence, like the Earth, Saturn already has equinoxes, solstices, and recurring seasons, and therefore seems destined for eventual habitation. In *Astronomy*, by F. W. Dyson, LL.D., F.R.S., Astronomer Royal, we read as follows:—

> "A division in the ring was discovered by Cassini in 1675 separating it into two, and in 1850 it was seen to be continued on its inner rim by a 'dusky' ring" (p. 95).

Mr. Prentiss supplies the following further particulars, though he adds that recent observations tend to reduce the figures:—

> "The exterior diameter of the ring system from the outermost edge of the outermost ring across the planet to the outermost edge of the same ring on the other side is 172,800 miles. The innermost (dark) ring is 11,000 miles in diameter, perpendicular to the planet, and its inner edge is some 8,000 miles above the planet's surface. The middle (bright) ring is some 18,000 miles in diameter.
>
> The division between this ring and the outer (bright) ring, known as 'Cassini's division,' is some 2,200 miles wide, and the outer (bright) ring is some 11,000 miles wide. This gives the outer edge of Saturn's ring system a distance above the planet's surface of some 50,000 miles"; yet "they are only about 50 to 100 miles wide horizontally; that is, on a line parallel with the planet's surface.
>
> These rings circle round the planet on its equatorial line, showing that these wonderful rings are under the influence of the planet's rotary motion and revolve with it. They are intimately bound together, and are not acting independently of each other" (pp. 31, 33).

Elsewhere (p. 35) he tells us that, at its equator, Saturn travels rotarily at the rate of some 22,000 miles per hour, or about 22 times faster than Earth's rotary spin.

As regards surface temperatures, it would seem that those of the outer or major planets are determined by the internal heat of the planets themselves, rather than by the radiant heat they receive from the Sun.

> "Jupiter is probably at something like red-heat, but it does not emit sufficient light to illuminate its satellites when they are shaded from the Sun. Saturn, Uranus and Neptune are probably at higher temperatures" (*Astronomy*, by Dyson, pp. 97, 98).

The following particulars relate only to the major planets. Similar particulars concerning the minor planets are unnecessary in connection with present purposes:—

Size.—Jupiter's diameter is 11 times, Saturn's 9 times, Uranus's 4 times, and Neptune's 5 times that of the Earth, which is 7,936 miles. Thus the two giants of the planetary world are Jupiter and Saturn.

Mass.—This is generally expressed in fractional terms of the Sun's mass. Jupiter's mass is less than $\frac{1}{1000}$th of the Sun's; Saturn's between $\frac{1}{3}$ and $\frac{1}{4}$ of Jupiter's; Uranus's and Neptune's each about $\frac{1}{20}$th.

Density.—The density of the outer planets is much less than that of the Earth, which is $5\frac{1}{2}$ times the density of water. Jupiter, Uranus, and Neptune are only slightly denser than water. Saturn, however, is not so dense. If the Earth's density be represented as 1, then Jupiter's is 0.23, Saturn's is only 0.11, Uranus's is 0.25, and Neptune's is 0.17. On this subject Dr. Dyson remarks as follows:—

> "The differences in density point to great differences in physical state, which arise from the fact that the process of cooling, and its accompanying process of shrinking, have proceeded more rapidly in the small planets than in the large ones" (*Astronomy*, p. 22).

From this point of view, the present conditions and appearances of Jupiter and Saturn are particularly interesting.

Do not the foregoing considerations suggest the inference that the Sun and its dependent family of planets and other celestial bodies *all originated out of one common fund of nebulous matter*, and are therefore all constituted alike; that the planets one and all have passed or will pass, through the same successive stages of development; and that every one of them, including of course our own Earth, *was once a burning world*, and, in process of time—owing to the combined effect of its terrific inherent heat, the tremendous centrifugal force exerted by its rotational motion, and the fact that its gravitational pull would be less at the equator than at its poles by just the amount of that opposing centrifugal force, sending all its volatilizable elements sky-high, on a line with its equator, to sweep there round and round it as long as destiny decreed—became possessed of *concentric rings* similar to those that still surround the youngest of all the planets—Saturn ?

Against the idea that all these bodies are constituted alike, there is this to be said—

> " In the spectrum of Jupiter there appears to be one line not in that of the sun, pointing to a constituent of its atmosphere with which we are unacquainted on the Earth. The spectra of Uranus and Neptune show very considerable differences from that of the Sun, from which the inference is drawn that they are surrounded by dense atmospheres totally different from our own (*Ibid*, p. 99).

There are also certain dynamical difficulties which cannot be overlooked. Though the satellites of the various planets which have these attendants—

> "generally move in planes not far removed from the ecliptic, and revolve around their primaries in the same direction in which these revolve round the sun,"

yet there are some notable exceptions. For instance, Jupiter's eighth moon revolves in a direction opposite to that of all its seven sisters. The ninth moon of Saturn—

which has ten altogether—moves in a retrograde direction, in a very elliptical orbit. Uranus's four moons are particularly remarkable, in that they revolve in a plane almost perpendicular to the plane in which Uranus itself revolves round the Sun. Lastly, Neptune's one moon moves in a retrograde direction, in a plane inclined at 35° to the plane of Neptune's own orbit (*Ibid*, pp. 94, 96). If these be *irregularities*, is it unreasonable to wonder whether, some time in the unimaginably remote past, the nebula out of which the *regular* portion of our Solar System has been thought to have originated, did not drift into, and get tangled up with, some other nebula whose spiral rotation was quite differently characterized; and that *an ultimate blend of the two produced the erratically constructed complex that we now see ?*

Again, in Laplace's famous hypothesis, complexities of development arising out of the slight rotatory motion with which he supposed the Nebula to have been originally endowed, are assumed to have been a dominant factor in the subsequent process of evolution as he conceived it. If this assumed idea on Laplace's part is not now given up, it has at least been modified. Says Dr. Dyson—

> "It has been pointed out recently by Prof. Jeans that 'gravitational instability' or a tendency of matter to accumulate around nuclei of slightly greater density, and for these nuclei to increase and gradually collect more and more nebulous matter around them, is probably a more important cause than rotation in the development of a planetary system from a nebula. A very careful criticism of Laplace's hypothesis has been given by Messrs. Chamberlin and Moulton. They consider that the solar system has been derived from the aggregation of meteoric dust and fragments, which had possibly resulted from the collision of previously existing bodies" (*Astronomy*, p. 109).

Obviously, however, the contributory factors were both numerous and complex in their operations. Collisions, fragments, meteoric dust, nebulæ, two or more of these last perhaps wandering into each other and getting mixed up, rotation, gravitation, heat and expansion, cooling and contraction, centrifugal and centripetal forces of several kinds—none of these were improbable; all seem quite consistent with Laplace's general idea; and it is difficult to imagine that any of them were any more absent from Laplace's mind than they are absent from the minds of thinkers to-day.

One other point still remains to be considered. The question may be asked: "If the rings of the original Nebula broke up into the planets which were eventually formed, why did not the similar rings once supposedly possessed by all the planets of the Solar System also break up into smaller dependent orbs? In particular, why have not the rings of Saturn so broken up? Is there anything in their present appearance or condition, pointing to that as their eventual destiny? The answer is that those planets which now no longer possess rings have, as a matter of fact, one or more satellites circling round them. Jupiter has at least four; Uranus has also four; while Neptune has at least one. Even Saturn, which still retains its rings, has no less than ten. To this, however, the obvious rejoinder is, that the matter which went to the formation of Jupiter's four moons, or that now represented by Uranus's four moons, cannot possibly have exhausted all the matter which once, in a volatilized state, had surrounded those two planets in the shape of rings. Hence, the balance of that matter—unaccounted for by astronomers up to date—must still be existing and discoverable somewhere. Or, the above question may be reversed thus: "If Saturn, with its glorious rings, and its ten satellites in addition, represents a typical stage in the process of evolution from original nebula to eventually concrete and organized orbic maturity, how came it that the concentric rings of the original Nebula ever broke up into planets only? Why did not a portion, at least, of that mighty ring-system remain in being, just as Saturn's ring-system remains still in being, and await the day when—the sun having cooled down—ring by ring, the volatilized solids first, and the lighter materials afterwards, according to their densities, it might gradually descend to the surface of the Sun, and settle there permanently, in stupendous successive layers?" The only reply to this that I can think of, is the following. The original nebular matrix imagined by Laplace existed under conditions vastly different from those of the Saturnian system, or any other particular constituent portion of the Solar System. The nearest fixed star is *α* Centauri, its distance being some 270,000 times the distance between ourselves and the Sun. Thus, the isolation of that nebular matrix in space was such that anything in the nature of external influences operating upon it must have been imperceptible. It is far otherwise with the Saturnian world, or any other subordinate department of the Solar System. All sorts of influences must have poured in upon it from the Sun and from its sister planetary systems, all tending to control its development in evolution, and to impart to it a definitely individual character. Therefore, if the process by which our Solar System evolved from an original nebular matrix, is not in all respects, stage by stage, reproduced in the evolutional history say of the Saturnian world, why should we be in the least surprised?

Now let us pass to Jupiter. This enormous orb represents planetary volution one stage further on than the stage at which we behold it in the case of Saturn. Saturn, though possessing no less than ten moons, still retains its rings. Jupiter possesses only four large moons; but its rings—assuming that once upon a time it had rings—have disappeared, as such. What has become of them, or at least of the stuff of which they were composed? Have they fallen upon the planet, settling permanently upon its surface, or at least spreading themselves round the Jovian globe in the shape of an immense enveloping mantle of comparatively low-lying, but still floating, because still volatile, matter? This is what Mr. Prentiss maintains. As the rings, after segregation, began, one by one—the lowest and heaviest first—to descend nearer and nearer to the planet's surface, they would necessarily do so along precisely the same lines as those along which they had once ascended, and would finally spread themselves out, away from the equatorial line, north and south, towards the poles. Because Jupiter's gravitational downward pull, as exerted at the poles, would be stronger from those directions than at the equator, where the centrifugal force arising from the planet's rotation on its own axis, would counterbalance it to some extent. Neverth less, as the floating volatile substances sink lower and lower—in fact for as long as they do not drop to the level of the rain-belt, or height above the planet's surface where condensation into water naturally takes place—for just so long will there be heavier accumulations over the equatorial regions than anywhere else, in spite of the tendency to spread sideways. How long this stage of evolution is likely to endure, may be estimated from a consideration of the fact that the rate of speed at which the descending process goes on can never possibly exceed that at which the forces which originally sent all the volatilized substances aloft wane. As well as can be judged, Jupiter has now reached the stage at which its descending, but still volatile substances, once rings, are diffused quite evenly around the planet, as it were completely blanketing it in belts at a distance of about 1,000 miles from its surface. Being, however, as we have seen, more banked up in equatorial regions than in regions nearer the poles, they shut out the fiercer rays of the Sun at the equator, and tend to equate the temperature there with that prevailing in what, north and south, might otherwise be described, in language familiar to us because of our own present terrestrial conditions, as the temperate and arctic or antarctic zones. Thus—probably for scores of millions of years—Jupiter is destined to experience nothing except that warm, uniform, edenic climate to which I have already referred some way back. As regards Saturn, which is now passing through a much earlier stage of evolution, Mr. Prentiss is of opinion that—

> "Its vaporized solids are, in the main, spread quite evenly over its surface nearly to its poles, while its lightest vapors, mainly its water and carbon, are slung high above its surface, revolving around it in rings, as we see, high above its equator" (p. 63).

Adopting, then, some modification of Laplace's *Nebular Hypothesis*, or, if preferred, even of Chamberlin and Moulton's *Planetesimal Hypothesis*, with its basic idea of an eruptional origin, and knowing what we do of those two extraordinary planetary systems associated with the names Saturn and Jupiter, we are in a position to form a very fair conception of the volutional stages through which our own Earth has probably passed, to reach the conditions in which it now finds itself. Clearly, like the Sun to-day, and like all the planets in distant times, it was once a burning world. Clearly, also, it once possessed rings, just as Saturn possesses them yet. As clearly, that stage was left behind, and it passed into and through that further stage through which we can see that Jupiter is even now passing—ringless, but mantled in clouds of those volatile substances which once upon a time had constituted its rings—a stage during which these blanketing clouds acted, probably for countless millions of years, as an intercepting medium in respect of the fierce actinal rays of the Sun, and so, throughout those many successive æons, conferred upon it a warm uniform edenic climate—a kind of greenhouse temperature, as Mr. Prentiss calls it, that prevailed all over it, from pole to pole. Even this stage came at last to an end, and Earth entered upon yet another—the stage (never yet reached either by Saturn or by Jupiter or by any other planet, so far as we know) which opened with that stupendous revolutionary change in Terrestrial conditions sometimes styled "The Glacial and Inter-Glacial Periods," and more popularly "The Great Ice-Age," which appears to us to have arrived so suddenly, and which is dealt with so originally, so interestingly, and so ably by Mr. Prentiss in his book under review.

To cut a long story short, we learn from Mr. Prentiss (who is largely inspired by the writings of the late Professor Isaac N. Vail) that it was the successive falls to Earth of the last few spread-out layers of volatile matter blanketing the globe, which caused the various *Ice-Ages*; that, even in the Saturnian stage, the entire disc-like formation of volatilized substances had begun to segregate into rings, each representing those substances in some special order of their gravity—the heavier consisting of metals, carbons, etc., and destined to be the first to fall; the lighter consisting of mixed carbons and water; while the lightest (water) would float highest, and be the last to fall; that these disc-rings and onion-like layers of the diffused blanketing clouds had vast spaces between them, and the more the rings and layers descended and condensed the greater would be the spaces, until, when the falls occurred, the spaces would be far wider than the layers; that after each fall of a layer, a very long time would be required to restore the warm, equable, edenic climate, because the next highest layer or ring would be at a tremendous elevation, but when any such further ring did come down and join the blanket-like formation, it would not only bank up heavily over the equatorial regions, but would also spread out towards the poles, shutting in the heat there, and so equalize the temperature everywhere; and thus it was these vast intervening spaces, combined with the immediately preceding ring-drop, which were the cause of the so-called *Inter-Glacial Periods*. In these Inter-Glacial Periods, explains Mr. Prentiss—

> "there being no clouds low enough to condense into rain, there could be no rain, and there being no torrid, temperate, and frigid zones with radically different temperatures, except close to the remaining ice sheets, there would not be storms of wind and rain, and the result must have been a warm, quiet, rainless, stormless age of very uniform temperature" (p. 259).

Meanwhile, let us remember that, as a consequence of these successive condensations and falls, and proportionately thereto, the vast pall of volatile substances which for untold millions of years had been blanketing the Earth almost from pole to pole right up to the time of the first Ice-Age, and which was periodically re-formed, or at least augmented, at the advent and throughout the duration of the various successive Inter-Glacial Periods, was steadily undergoing a process of drain, and becoming gradually thinner; and hence more and more diffused light was gradually penetrating the pall, as it slowly drew nearer and nearer to the Earth. Here again I quote—

> "From the foregoing it will be seen that an ice age and a deluge are twins of a common parentage, and sprang from a common cause; that just as sure (*sic!*) as there were four or five ages of ice, just so sure (*sic!*) were there four or five deluges, all but one of which occurred before man appeared on the earth" (p. 247).

> "Finally the last great Ice Age came on, and a tremendous fall of snow for the last time buried the frigid and temperate zones under immense sheets of ice, while torrential rains deluged the warmer portions of the earth, causing the Noachian deluge.

"This was caused by the fall of the last belt of the returning vaporized oceans, clearing the skies and ushering in an entirely new era. The old, era of a cloud-covered earth passed away, never to return, and man for the first time saw the rainbow and the undimmed sun shining in all his glory" (p. 253).

All this is very wonderful and very enlightening. But one thing is quite certain ; and that is that, if we are to accept Mr. Prentiss's solution of the problem of the Ice-Ages and the Inter-Glacial Periods, then many of our old ideas about the kosmic and terrestrial past—and in particular many of the ideas which for generations have almost attained the rank of dogmas in scientific circles—will have to go by the board.

For instance : the vast deposits of what are termed 'stratified rocks' covering both land-areas and ocean-floors in many regions, are found in layers of different kinds—metalliferous, carboniferous, lime, and so forth—*each kind reposing separately by itself, and all showing a depth or thickness of from 15 to 20 miles* till we reach the foundation on which they rest, the once molten but now cooled and vitreous surface of the Earth. According to scientific teaching, they were formed by what is technically termed 'Erosion.' *But erosion from what ?* At the time when they were formed, if land and water were then in the same proportions to each other that they are in now, one-quarter of the Earth's surface was land—the cooled, vitreous, fire-hardened foundation just mentioned—and 3-quarters consisted of water—the archæan, far-stretching, but shallow seas already referred to. There were as yet no mountain-ranges, or other elevated regions, on the globe. For instance, the Himālayas were unknown till Pliocene times—millions and millions, probably billions, of years later! How, then, by the washings from this flat, bare, glassy land area, representing only $\frac{1}{4}$ of the Earth's surface, could the shallow seas, representing $\frac{3}{4}$ of it (not to speak of the continents themselves) have been filled up in parts to the depth stated? Even if the proportions of land and water were *not* then ¼ and ¾ respectively, are we seriously to be asked to believe that erosion effected the deposits in that orderly sequence of distinct and separate layers which distinguishes them? In the *Text-Book of Geology*, at p. 983, we actually read—

> "We do not yet know satisfactorily the rate of erosion or sedimentary accumulation. Data have been gathered as to the mean annual rate of sedimentary discharge for nine rivers, and it varies between 1 part of sediment in 291 of water for the Rio Grande and 1 part in 10,000 for Uruguay. Harker states: 'The highest figure is thus thirty-four times as great as the lowest,' and 'a mean of nine figures so discordant cannot afford any information of quantitative value.'"

We should say not, indeed! Of what value, then, are any calculations based on so-called Erosion? This "Erosion" idea is, in short, utterly absurd. Clearly the bulk of these earthy deposits came *from the skies*, under the conditions already indicated.

Again, our text-books are full of allusions to geological periods, in course of which the land suddenly or gradually sank, and the seas transgressed, or advanced, over extensive areas. For example, Sir Charles Lyell, as already noticed, assumes different distributions of land and water, combined with sudden elevation and submergence of considerable land areas, in his attempted solution of the problem raised by the question of the cause of the Ice-Ages. Of course we know that specific continents, like those of Lemuria and Atlantis, are said to have actually sunk. I am not now referring to events of that nature. I am referring to occurrences that were very much earlier in time, and also, as we may suppose, even more general. In those remote ages—for we are now dealing with times that long preceded even the first Ice-Age—the seas were comparatively very shallow. Of course, if the land did actually sink, it would be possible for even shallow seas to "transgress" upon it. But suppose there really was no sinking. Suppose that, as Age succeeded Age, and deluge followed deluge—the water all coming from the rings and layers of volatilized elements floating in the skies—with one grand finale, in the shape of the last and greatest Deluge of all—may the truth not rather have been that the oceans and seas, originally shallow, sometimes gradually and sometimes suddenly became *vastly augmented*, till at last they attained their present dimensions and depths—whereupon, naturally, the land areas would in many places disappear, and seem to have sunk, and the oceans and seas would actually have "transgressed" upon the land? To me this explanation of the particular problem under notice appears much more adequate and acceptable than the elaborately reasoned, yet, for all that, not necessarily so reasonable, conjectures of *soi-disant* Science.

When geologists did not know what to do with an old-world land-area—when the conditions it presented did not fit in with their theories—they incontinently sank it. Then, if their theories needed it, they just as readily raised it again from the deep. All by imagination and capricious will-power!

Lastly, in conventionally prevalent theories it is assumed, as a matter of course, that from the epoch when the first beginnings of organic life made their appearance on Earth, up to present times, the Sun has shone on the Earth's surface just as steadily, brightly, and warmly as it does now, interrupted say only by passing clouds. This assumption must henceforth be given up.

How all these remote and mighty happenings affect the subject of "Āryanism and the Ṛig-Vedic Age," and in particular the question of "The Origin of the Āryas," must be reserved for future consideration.

Aryanism and the Rig-Vedic Age

BY

H. BRUCE HANNAH

IV

Prominent in the long procession of arguments which stream past us in Mr. Abinas Chandra Das's *Rig-Vedic India*, in support of the conclusion that "there can be no doubt that the Indo-Āryans lived and flourished as a civilised people in the Miocene or Pliocene epoch" (p. 22), is the statement that Sapta-Sindhavaḥ, or "Sapta-Sindhū," as he prefers to call it (if not actually their domicile of origin, at least their special *habitat* and homeland for thousands of years), was centrally situated with reference to four distinct seas or oceans—(1) a Rājputāna Sea, which can be safely surmised to have lasted up to the end of the Tertiary epoch (p. 7); (2) a long stretch of sea existing in the Miocene, nay possibly even the Pliocene, epoch, which extended from the eastern shores of Sapta-Sindhū eastwards as far as the confines of Assam; into which the Ganges and Yamunā, after running their originally short courses, poured their waters; and which may now be described as having covered what is known as the "Ganges Trough" (p. 10); (3) the Arabian Sea, and an arm of it which extended up towards the Indus Valley and so covered a large part of Sindh (p. 25); and (4) a large Sea lying north of the Himālayas, at an early geological epoch connected with the Arctic Ocean, later converted into an inland sea, covering a large area in Central Asia, extending as far west as the Black Sea, and continuing to exist as an Asiatic Mediterranean **down to** the dawn of historical times (pp. 27, 28).

In his *History of Sanskrit Literature*, at p. 143, Professor A. A. Macdonell ventured the observation that "the Ocean" was probably known to the **Indo-Āryas** only from hearsay. Mr. Das will not have this at any price. Not only, he asserts, were the Indo-Āryas familiar with the word *Samūdra*, in the sense of "Sea" as distinct from *Sindhū* (see *Ṛig.* VIII, 6, 4 ; 92, 22), but they even sometimes used *Sindhū* in the sense of "Sea" (*Ṛig.* I, 46, 2, and argument founded thereon). This is probably correct. Further, he cites a number of texts illustrative, as he maintains, of the intimate knowledge of the Ocean and its affairs possessed by the Indo-Āryas. In this connection I do not go so far as to say that Mr. Das has altogether failed to make out his case: but I cannot help thinking that some of his citations are not very convincing. It is by no means difficult to imagine many poets, who have never seen the sea and know nothing about it personally, being quite able to give utterance to ideas of the sort expressed in some of these hymns. Again, Mr. Das cites *ṛigs* which speak of *Samūdras* in the "East" and in the "West" (*e.g.*, X, 136. 5), and *ṛigs* which allude to Ushās being "seen in the East," and being "born in the Eastern quarter of the spacious firmament" (I. 124. 3 ; 5). This last is really cited in connection with Mr. Das's criticisms of the late Mr. Tilak's "Arctic Home" theories: but it also seems to be vaguely relevant here. Finally, in connection with the Oceans, we are referred to *Ṛig.* IX, 33, 6, and *Ṛig.* X. 47. 2. Looking these up in Wilson's edition of the *Ṛig-Veda Saṁhitā*, this is what I find—

Vol. V, p. 257.

"6. From every side, *Soma*, pour upon us four oceans of riches, grant us thousands (of desires)."

Vol. VI, p. 127 (addressed to Indra).

"2. (We know thee to be) well armed, a sure protector, a safe guide (renowned throughout) the four oceans, the depository of riches, deserving of repeated worship, adorable, the preventer of many (ills): grant us various fertilizing riches."

These two lonely verses, with their vague and obviously metaphorical allusions to "four oceans" (which might be *any* oceans), we are solemnly asked by Mr. Das to accept as proof of the "perfect knowledge" possessed by the "Indo-Āryans" of the four specific seas surrounding the land of Sapta-Sindhū as above described (p. 34).

Then, as the kind of text which shows how familiar the "Indo-Āryans" must have been with the Deep, as a shoreless and limitless waste of nothing but water, save for an occasional island (*Dvipa*), behold the following, cited at p. 35—

Ṛig-Veda I, 169, 3 = Wilson, Vol. II, p. 158.

"3. Thy weapon, Indra . . . Agni . . . the oblations encompass him as the waters (surround) an island."

Verily, Mr. Das is easily satisfied! Moreover, it appears, the Āryan merchants used actually to "plough" the seas with their vessels. What perfectly clinching evidence! Who but a naturally sea-faring people would be acquainted with an expression like that? The wonder is how such great men had not the moral courage to refrain from using such very "common stock"!

I really must draw attention to yet one other of Mr. Das's citations from the *Ṛig-Veda*, upon which he seems to rely in proof of an intimate knowledge on the part of the "Indo-Āryans" of at least one of these four hypothetical oceans, but which appears to me to evaporate in his hands. It is *Ṛig.* I, 116, 3, 4, 5 = Wilson, Vol. I, pp. 306, 307—

"3. Tugra, verily, Aswins, sent (his son) Bhujyu to sea; as a dying man parts with his riches. But you brought him back in vessels of your own, floating over the ocean, and keeping out the waters.

4. Three nights and three days, Nāsatyas, have you conveyed Bhujyu, in three rapid, revolving cars, having a hundred wheels, and drawn by six horses, along the dry bed of the ocean, to the shore of the sea.

5. This exploit you achieved, Aswins, in the ocean, where there is nothing to give support, nothing to rest upon, nothing to cling to —that you brought Bhujyu, sailing in a hundred-oared ship, to his father's house."

True, the idea of the "Ocean" is brought in here: but the reference is not to any Ocean in the ordinary sense of the word—and quite certainly not to any of the four specific Oceans above alluded to as once surrounding the land of Sapta-Sindhavaḥ, as Mr. Das would have us understand it. Obviously, what the Priest-Poet has in his mind, is the annually recurrent struggle between Indra on the one side and Vritra (under the names of Çūshna, Çambara, etc.) on the other, during the 90, 99, or 100 days of the cloudy 3 months (presided over by Ekata, Dvita, and Trita) which roughly constitute the "Rainy Season," at the end of which the Sun is released from his prison—Bhūjyū is rescued. Mr. Das ought to be perfectly well aware of this himself: for in his criticisms of Mr. Tilak's views regarding the Arctic North, as referred to in the *Ṛig-Veda*, he makes considerable play with this very argument in his chastisement of that brilliant writer.

It will be remembered that, when wrestling with the question as to when Man first appeared upon the Earth, Mr. Das adduced a certain amount of testimony in favour of the possibility, if not the probability, of that event having occurred towards the close of the Miocene sub-period of the Kainozoic or Tertiary Era (p. 23). On grounds both geological and archæological, however, he is fairly sure that Man existed in the Indian Peninsula in

Pliocene times (p. 22). Even that position, he feels, has its perils from the standpoint of cold scientific proof: but in any event—and here, in his enthusiasm, Mr. Das passes from the idea of Man's first appearance on Earth, or in India, to the still more fascinating idea of the age of some of the oldest hymns of the *Rig-Veda*—we need have no hesitation whatever in assigning it to the Pleistocene. None of which ingeniously alternative views, be it noted, contribute in the slightest degree whatsoever towards restraining Mr. Das from placing in the forefront of his argument the assertion already referred to—that "there can be no doubt that the Indo-Āryans lived and flourished as a civilised people in the Miocene or Pliocene epoch" (p. 22), presumably, of course, in Sapta-Sindhavaḥ.

A very few considerations will suffice to reveal the utter baselessness and even absurdity of this complacent pronouncement. Mr. Das does not offer any *direct proof* of his statement. He *has* none. The conclusion is arrived at by a process, in the nature of special pleading, which consists largely of a series of mental gulps and wriggles that are at least highly diverting. The evidence, such as it is, for Man's presence in the Indian Peninsula (mark that term) during the Miocene, or at any rate during the Pliocene, comes, not from the North, not, for instance, from Sapta-Sindhū itself, but from the despised South—from Further India and the Narbada Valley. But Mr. Das has no intention of letting a little circumstance like that foil him. Sapta-Sindhū, he points out, is one of the oldest life-producing regions in India, if not the oldest. (As a matter of fact, it and its whole neighbourhood was once submerged under the Southern Ocean—probably in Jurassic times—and only later became added to India: it is therefore *younger, not older*, than the rest of India, geologically!). Therefore, of course, Sapta-Sindhū must have been inhabited by Man long before any other part of India was. Therefore development in evolution there must have been far in advance of such development elsewhere. Therefore, when Man was just appearing in Further India, or the Narbada Valley, during the Miocene, autochthonous Man in Sapta-Sindhū must have been far on the road of Progress. Therefore Civilization must have been attained by autochthonous Man in Sapta-Sindhū long before it was attained by any other representatives of Man in India. The rest of the world did not count then. But autochthonous Man in Sapta-Sindhū was "Āryan." He was the 5 *Janāhs* mentioned in the *Ṛig-Veda* – now called the "Indo-Āryans." Therefore, "there can be no doubt that," etc., etc., as stated at p. 22 of Mr. Das's book.

Again, speaking from a Darwinian point of view, we may take it for granted that the erect posture of Man is of very ancient origin—

> "for it is fully developed in the oldest fossil-men, and probably had its beginning in the gibbons of Pliocene time. It is, however, not so much in his posture that man differs from the large anthropoids as in his manner of progression. He is adapted to living on the ground, 'an adaptation which allowed him to escape beyond the limits of forests and occupy the whole world.' It is, therefore, in the construction of the legs and in the setting of the entire foot upon the ground (plantigrady) that man varies much from the greater apes, and as the human leg and foot are already developed in the oldest known fossil-man, it is clear that this evolution also took place prior to the Pleistocene" (*Text-Book of Geology*, by Pirsson and Schuchert, pp. 960, 961.)

Again—

> "In the later Oligocene of Egypt appears the oldest ape (*Propliopithecus*), apparently the progenitor of all later anthropoids. This was a small animal which spread in early Miocene time into Europe and there gave rise to the larger apes of the Western part of that continent (*Pliopithecus* into *Dryopithecus*). It is, then, since the middle Miocene time that we may expect the rise of the human stock.

The great-bodied primates of about this time probably divided into two independently evolving stocks, the one retaining the ancestral arboreal habitat, the other taking more and more to the ground. The former line of evolution gave rise to the gorilla and chimpanzee of Africa and the orang of Borneo and Sumatra, while the terrestrial stock developed into the ancestry of man. Living man is known as *Homo sapiens* (reasoning man) and in his varied geographical races is distributed over the entire earth. As we go back into the Pleistocene we meet with other human species, more and more primitive, and finally with the ape-man (*Pithecanthropus*) of Java" (*Ibid*, p. 962).

We talk readily and lightly of the Recent and Pleistocene sub-periods of the Quaternary or Post-Tertiary Era, of the Pliocene, Miocene, Oligocene, and Eocene sub-periods of the Tertiary or Kainozoic Era, of the Cretaceous, Jurassic, and Triassic sub-periods of the Mesozoic or Secondary Era—not to speak of the Palæozoic or Primary Era and the Eozoic or Archæan Era, with their respective sub-periods—but what do we mean by these names in regard to *time*? In that connection what ideas ought we reasonably to attach to them? According to Dana, the Mesozoic was 3 times as long as the Kainozoic, inclusive of the Post-Tertiary up to date; and the Palæozoic was 4 times the duration of the Mesozoic. Hence, we may presume that the Archæan was 5 times as long as the Palæozoic: thus giving the following ratio—Tertiary and Post-Tertiary, 1; Secondary, 3; Primary, 12; Archæan, say 60; *i.e.*, Kainozoic time was only $\frac{1}{76}$th of the whole. It equates with the Tertiary Era, but is here meant to include also all post-Tertiary time up to date, *i.e.*, some 2,000,000 years, even on Wallace's calculations. According to others, this must be considerably reduced (*Man and the Glacial Period*, p. 363). Also, according to an estimate by H. R. Knipe (who judged by the thickness of the stratified erosional deposits for each sub-period in America), the present period since the last Glaciation lasted 50,000 years, the Pleistocene 150,000 years, the Pliocene 200,000 years, the Miocene 850,000 years, the Oligocene 500,000 years, and the Eocene 500,000 years; while, according to larger European estimates, the Recent and Pleistocene lasted 400,000 years, the Pliocene 1,200,000 years, the Miocene 1,400,000 years, the Oligocene 1,200,000 years, and the Eocene 2,000,000 years. All these calculations, be it remembered, were based on the theory that the deposits referred to were the result of Erosion. But, if this theory be unsound, or even riskily elusive; if, in short, we have to discard it in favour of a theory that the deposits were all effected from the skies, secularly, *i.e.*, that each stratum took just as long to be formed as each planetary ring took to descend and diffuse its constituent elements upon the bare vitreous surface of the Earth—what then? These ring-descents only occurred at special epochs, and between any two of them there seems to have been an interval of inconceivably long duration—perhaps scores of millions of years. Then, when a ring-descent did take place, the ensuing precipitation of de-volatilizing material upon the face of the Earth must have been indescribably slow. Possibly, therefore, we shall have to increase indefinitely even the biggest of our estimates of the durations of the successive geological periods. Assuming, however, that Man made his first appearance upon the Earth at the close of the Pliocene sub-period, or sometime early in the Pleistocene sub-period, what, then, is the use of speculating as to how long ago even that was—or at least of being in any way dogmatic on the subject—seeing that we may really have to think, or rather to conjecture, in unknown millions of years?

In that case, where do Mr. Abinas Chandra Das and his claim regarding the antiquity of the "Indo-Āryans" of Vedic Sapta-Sindhū, not merely as human beings, but as a pre-eminently, or shall we even say exclusively, civilized people, come in ?

But even from the standpoint of the old orthodox views in this connection, and the estimates as to time thereon based, Mr. Das is equally out of court: for, as I showed in a previous paper, even up to the close of the Pliocene, the world—so far as specialists have been able to ascertain—was a world whose dominant inhabitants were the Anthropoids; and, as for Sapta-Sindhū, that part of it, at least, in which the Siwāliks are situated, was a particularly notable stronghold of these extraordinary creatures ! Man may have been *on his way*: but, so far as we know, he had not yet *arrived.*

Even that, however, is by no means all. Mr. Das's views regarding the more or less extensive and distant seas that once surrounded Sapta-Sindhu, are a very prominent and important feature of his case. On the strength of the texts which he cites, he maintains that the already highly civilized "Indo-Āryans" in Sapta-Sindhū were familiarly acquainted with these Miocene or possibly Pliocene seas—even with these 4 oceans—and that certain of the hymns in the *Ṛig-Veda* actually contain references to them. He tells us that there is geological evidence to prove that in very early times—in fact, from early Permian times—*Southern India* (note the specifically limitational description) formed part of a huge continent (for which Blanford proposed the name "Indo-Oceana,") which extended from Burma and South China on the east, to East and South Africa on the west, and from the Vindhya hills on the north to Australia on the south. It was probably not connected anywhere with Western Asia, though, he adds, there is reason to believe that it did join with the Eastern Himālayas somewhere in the neighbourhood of distant Assam (pp. 91-92). Mr. Das's main concern at this stage seems to be to draw our attention to the fact that, owing to the **interposition of** the Rājputāna Sea, south or south-east of **Sapta-Sindhū, Sapta-Sindhū must** have been *wholly cut off* **from any** kind of inter-communication between itself and this great southern continent—Mr. Das's dominant idea, of course, being a desire that we should realize that humanity in Sapta-Sindhū was *sui generis*, or at any rate altogether different in its origins and nature from humanity as evolved, or at least resident, in "Indo-Oceana." As for Assam and Bengal, he seems to be content to let their destinies in this respect drift. They *may* have derived from the inferior ethnic strata of the South. But not so the favoured "Āryans" of Sapta-Sindhū. From the beginnings of time—isolated, guarded—they had developed steadily into super-evolutional maturity within the borders of their own "God-fashioned" Country (*Devanirmita Deça*). With regard to the epoch of their origin, and to the age of some of the early hymns of the *Ṛig-Veda*, we have seen that, though not exactly quarrelling with the Pliocene sub-period, and being even content if necessary to fall back upon the Pleistocene sub-period, what Mr. Das really wants us to be impressed with are the claims in this connection of *the Miocene*—be it only its fluttering tail-end. By hook or by crook, therefore, it was necessary to obtain some sort of support for a statement that the Rājputāna Sea, the Sea along the Gangetic Trough, and even the Indo-Oceanic continent, all lasted up to the close of the Miocene. This Mr. Das does not fail to find, in a casual conjecture thrown out by the late Professor Huxley, and lying embedded in some remarks made by Blanford and quoted by Mr. Das at p. 94. There we read—

> "The Indo-Oceanic land appears to have existed from at least early Permian times, probably (as Professor Huxley has pointed out) up to the close of the Miocene epoch."

Commenting on these remarks by Blanford, Mr. Das (*inter alia*) adds that it is possible—

> "that the isolation of Sapta-Sindhu continued till a much later period" (p. 97).

Here it may be observed—not only in this specific connection, but also generally—that, whatever the evidence secured by Mr. Das for any of the positions he is labouring to establish, he is quite good at seizing upon, and utilizing, all sorts of little curiosities and obscurities elsewhere discovered by him, for the purpose of *stretching* that evidence just a wee bit—sometimes a good deal—further. At the same time, why Mr. Das should be so concerned regarding the duration of "Indo-Oceana," when, according to him, *not Northern* India, and in particular *not Sapta-Sindhū*, but only insignificant and despised *Southern* India, had any connection with it, is not readily apparent. However, that is the way Mr. Das's mind works. Somehow or other he meanders to his end.

As for the Gangetic Sea and the Rājputāna Sea, Mr. Das seems to have come across in this way nothing particularly worth picking up. *Per force*, therefore, he has had to take refuge in broad qualified statements which practically commit him to nothing, while leaving him free to indulge in whatever plausible suggestions will best dove-tail into his general scheme. All he knows about the Gangetic Sea is that it was a Miocene Sea, except that on p. 21, he says—

> "It lasted through the whole of the Mesozoic Era up to the Miocene *and possibly the Pliocene epoch of the Cainozoic Era*, before it became alluvial land. As we find mention of this sea in the Rig-Veda, the latter must be held to be as old as the Miocene or the Pliocene epoch whose age is to be computed by some hundreds of thousands, if not millions of years. This, at first sight, would seem to be extremely incredible. But," etc.

The italics are mine. As regards the statement that the *Rig-Veda* must have been as old as the Miocene or Pliocene, because some of the hymns make mention of this Sea, in the first place it is not at all certain that that was the Sea referred to; and in the second place, even if it had been certain, the statement would be a *non sequitur*, as obvious as it is amusing. We know a good deal now about how, with the help of Brāhmanistic "editing," the *Vedas* in their present form came to be put together. However, I pass this by for the moment.

Of the Rājputāna Sea, all that Mr. Das really ventures to say is, as already noticed, that—

> "from the fact that 'Tertiary and Secondary strata stretch across from Sind, beneath the sands of the desert, towards the flank of the Aravalli,' it can be safely surmised that it lasted at all events up to the end of the Tertiary epoch, and that the above *Rik*" (VII. 95. 2, on the subject of the Sarasvati river) "must have been composed sometime during that epoch. If the disappearance of the Sarasvati was synchronous with that of the sea, then the event must have taken place some tens of thousands of years ago, if not hundreds of thousands or millions, and must have been posterior to the composition of, at least, some of the oldest hymns of the Rig-Veda" (pp. 7, 8).

Thus, then, Mr. Das, on the subject of Sapta-Sindhū and its surrounding Oceans or Seas, and the once existing, but now long sunken, Southern Continent—"Indo-Oceana," as Blanford proposed to call it.

Now let us see what the *facts* really were, so far as investigation has been able to ascertain them up to date. For since the days of Huxley, Blanford, and their contemporaries, considerable progress has been made in this vast sphere of research, and the sum of our knowledge in regard to Geology (as also to many other sciences) is much greater to-day than even the not unimposing stock which was possessed by the highly respected specialists just named.

True enough, then—once upon a time, but very very long ago, in fact as far back as early in the Permian, or last, sub-period of the Palæozoic or Primary Era—a period which, even on Knipe's moderate estimate, began in B.C. 7,500,000, and lasted for 500,000 years—the physiographical aspect of the world, *i.e.*, the distribution of its land and water areas, was very different from what it is to-day. An excellent map of it (Fig. 434) is given in Pirsson and Schuchert's *Text-Book of Geology*, 1920, at p. 759. There we find that in those days there were two principal continental masses, one of which extended transversely almost round the globe, well north of the Tropic of Cancer, except for two comparatively tiny areas lying in the neighbourhood of North-Central America, which overlapped that tropic southwards by about 10 degrees. Its greatest transverse length lay along an area enclosed by the parallel lines of the Arctic Circle, or rather a few degrees farther north, and Latitude 60 degrees North. In the extreme west—where it included all North America and Greenland—it has been called "Eria." This portion ran right up into the Arctic North. The central portion, which also linked up with Arctic regions, included the Arctic waters there, Spitzbergen, the North Atlantic, and nearly all Europe from the highest point in Scandinavia down to Gibraltar. The extreme eastern portion, which did not connect with the Arctic North, but which included all Asia east of Novaya Zemlya, and as far south as say Latitude 40 degrees North, has been called "Angara." The entire area was fantastic in shape. The great Southern land-mass or Continent—which has received the name of "Gondwanaland"—was situate almost wholly south of the Tropic of Cancer. In shape it was an enormous circle. Its most important mass stretched transversely across the globe, from a point considerably to the west of the western coast of South

America, eastwards as far as say Calcutta, but excluding Further India and the Malay regions, which were under water. To the north, in Mediterranean regions, between say Gibraltar and Sicily, it connected with the Northern Continent; and here it extended beyond the Tropic of Cancer northwards for a distance of nearly 20 degrees. A little farther eastwards it slightly overshot the Tropic line northwards. But in the extreme east—in fact, where India lies—there was another big bulge northwards, say up as far as the Pamirs and the Karakoram Mountains, and inclusive also of a goodly portion of Tibet. Beyond the extreme eastern limit—lying, in fact, in the Pacific, about where the Philippines, the Carolines, the eastern half of Borneo, and New Guinea now lie—was a large Island-Continent. All Africa and the seas east and west of it, were included in the long transverse main mass. To complete the circle, Antarctica sent up two huge arms —one east and the other west—the former joining on with Australia and the latter joining on with South America.

Now, as to the water-areas. The Pacific Ocean was very much like what it is now. The Atlantic was a comparatively small affair, stretching between Southern Eria (*i.e.*, a portion of North America) on the one side, and the junction-regions of the two great Continents (*i.e.*, say South-Western Europe and North-Western Africa) on the other. A great arm of the Arctic Ocean came down southwards between Greenland and Spitzbergen, about as far south as say 70 degrees North Latitude. Another much greater limb of the Arctic Ocean came down from the North in the region of Novaya Zemlya, and extended southwards as far as the northern end of the Caspian. The entire area enclosed by Gondwana land, regarded as a circle, was one gigantic ocean—completely land-locked. Lastly, from that part of the Pacific where lay the Island-Continent above-mentioned, came a huge long transverse

Sea, which, after covering all Further India, Malaysia, and Southern China, extended westwards as far as say Sicily, thus blotting out Central Asia, Western Asia, Asia Minor and the entire eastern half of the Mediterranean, with the adjoining countries of Southern Europe on the north and of Northern Africa (including Khem) on the south. To this great Sea geologists have given the name Tethys. I invite particular attention to the fact that, in these old early Permian times, India, as we are familiar with it, did not exist. But the region where it (*i.e.*, *entire* India, not merely *Southern* India) eventually did come into existence was then indubitably an integral part of the great Southern Continent which, under the name of "Gondwanaland," lay spread out across the globe throughout the whole length, and to the south, of the great Sea called Tethys. And so it remained, as long as Tethys and the Gondwana Continent endured. As for the spot in India which is now associated with the name "Sapta-Sindhavaḥ," or "Sapta-Sindhū," it is shown on Pirsson and Schuchert's map as having been then (*i.e.*, in early Permian days) under what can only be regarded as a most ineffably appalling state of *pralāya*, due to conditions of positive glaciation. Indeed, in those distant days Gondwanaland had many such areas of glaciation, both positive and uncertain. Or rather, as shown in the map, the glaciations in Gondwanaland were all positive. It was in the great Northern Continent that they were for the most part uncertain.

This, then, effectually settles Mr. Abinas Chandra Das's roseate dream-theories concerning the antiquity and supernature of the ethnic origins and evolutional developments that he fondly imagines are associable with Sapta-Sindhū, as a region absolutely cut off from all communication with Southern India or the great Southern Continent that once existed in what (relying on Blanford) he styles

"Indo-Oceana," and hence concerning the "**Indo-Āryans**" of Sapta-Sindhū as a race wholly apart from, **and superior** to, the races that dwelt in that mighty old southern **world** —at any rate so far as regards Permian times. **Seeing that,** as long as Tethys and Gondwanaland endured, ***all* of what is** now called India (and therefore Sapta-Sindhavaḥ itself) **must** have remained what we now know it originally was—an integral part of Gondwanaland—it follows that (putting aside for the moment all later immigrations from other parts of the world) the life-forms of early Sapta-Sindhavaḥ—fauna as well as flora—so far as they were autochthonously connected with it—must necessarily be regarded as akin (indeed, as very closely related) to the life-forms of all other countries and regions that similarly were once upon a time integral parts of the same great old Southern Continent. Hence, from an aboriginal point of view, if Mr. Das wants to find what are probably the nearest surviving relatives of his early "Indo-Āryans," as allegedly the autochthonous inhabitants of ancient Sapta-Sindhū, there can be very little doubt as to the direction in which he must bend his steps—Southern India.

One thing is quite certain. In those days there could have been in vogue no idea regarding four specially notable Oceans such as that about which Mr. Das talks. The reason is obvious. There was nobody to start the vogue or to keep it in being. Of course there were plenty of vast bodies of water to choose from. But there was no humanity to notice and discuss them. Millions of years had still to elapse ere the day of Man's first advent upon Earth dawned—probably many more than H. R. Knipe's minimum of 7,000,000, less the period during which Man has actually been in existence. Not even the higher Reptiles of the Prime—the monstrous Saurians of the greater part of the Mesozoic Era—had come into the picture. Even their day was also, as yet, millions of years off.

It was only the day of such primitive forms of animal life as the Amphibians.

It is time, however, to make a step forward in our enquiries. Let us try to ascertain the approximate periods up to which—so far as specialists have been able to discover from the available evidence—the medial Sea named Tethys and the great Southern Continent called Gondwanaland really lasted.

Probably the final break-up of Gondwanaland preceded the disappearance and even the shrinking of Tethys. At any rate, Mr. D. N. Wadia, M.A., B.Sc., of Jammū, Kāshmir, describes matters broadly but enlighteningly thus—

> "The Tertiary era is the most important in the physical history of the whole Indian region, the Himalayas as well as the Peninsula. It was during these ages that the most important surface-features of the area were acquired, and the present configuration of the country was outlined. Concurrently with the end of the Cretaceous or with the beginning of the Eocene, an era of earth-movements set in which materially altered the old geography of the Indian region. Two great events of geodynamics stand out prominently in these readjustments: one the breaking up of the old Gondwana continent by the submergence of large segments of it underneath the sea, the other the uplift of the geosynclinal tract of sea deposits to the north into the lofty chain of the Himalayas" (*Geology of India*, 1919, p. 203).

A little further on we read—

> "The vast pile of marine sediments that was accumulating on the border of the Himalayas and in Tibet underneath the waters of the Tethys, since the Permian period, began to be upheaved by a slow secular rise of the ocean-bottom. During the long interval of ages from the Mid-Eocene to the end of the Tertiary this upheaval continued, in several intermittent phases, each separated by long periods of time, till on the site of the Mesozoic sea was reared the greatest and loftiest chain of mountains of the earth.
>
> The last signs of the Tethys, after its evacuation of the Tibetan area, remained in the form of a few straggling basins. One of these

basins occupied a large tract in Ladakh, to the north of the Zanskar range, and another in the Hundes province in Kumaon; on their floors were laid down the characteristic deposits of the age, including among them the Nummulitic limestone—that indubitable and unfailing landmark of geological history. These sedimentary basins are of high value, therefore, in fixing the date of commencement of the uplift of the Himalayas in the time-scale of geology.

There were three great phases of the upheaval of this mountain system. The first of these was post-Nummulitic, *i. e.*, about the middle of the Eocene, which ridged up the central axis of ancient sedimentary and crystalline rocks. It was followed by another at the end of the Sirmur period (Mid-Miocene), which lifted the latter zone of sediments, converting them into the inner lesser ranges of the sub-Himalayas. The third and final phase elevated these two zones, together with the outlying zone of Siwalik deposits at their foot, into the Himalayan mountains as we now see them. This last phase was of Pliocene age, posterior to the deposition of the great thickness of the Siwaliks.

As already stated, it was in the early Tertiary, or the end of the Cretaceous, that Gondwanaland, the most prominent feature of the earth's Mesozoic geography, finally broke up, and the Peninsula of India acquired its present restricted form. Incidental to this change, a profound redistribution of land and sea took place in the southern hemisphere. Few geographical changes of any magnitude have occurred since these events, and the triangular outline of South India acquired then has not been altered to any material extent " (*Ibid*, pp. 203, 204).

After remarking that Tertiary rocks, from the Eocene upwards to the Pliocene, cover very large areas of India—less noticeably in the Peninsula proper, but very prominently and over an enormous superficial extent in a belt running along the foot of the mountainous regions on the western, northern and eastern borders of the country, *i. e.*, in what is called the extra-Peninsula, Mr. Wadia observes—

"In all these areas the Tertiary system exhibits a double facies of deposits—a lower marine facies and an upper fresh-water or subaerial. The exact horizon where the change from marine

> conditions to fresh-water takes place cannot be located with certainty at all parts, but from Sind to Burma, everywhere the Eocene is marine and the Pliocene fluviatile or even subaerial. The seas in which the early Tertiary strata were laid down were gradually driven back by an uprise of their bottom, and retreated southward from the two extremities of the extra-Peninsula, one towards the Bay of Bengal and the other towards Sind and the Rann of Cutch, giving place, in their slow regression, to estuarine and then to fluviatile conditions" (p. 205).

Elsewhere (p. 210) we read—

> "The great series of Tertiary deposits of Sind are typically exposed in the hill-ranges, Kirthar, Laki, Bugti, Suleiman, etc., which separate Sind from Balochistan. The Tertiary sequence of Sind is, by reason of its exceptional development, taken as a type for the rest of India, for systematic purposes."

Epitomized, that sequence is as follows—

Series		Period
Manchar (10,000 ft.)	...	Pliocene (Tortonian to Upper-Pliocene).
Gaj (1,500 ft.) ...	...	Lower Miocene (Burdigalian).
Nari (6,000 ft.) ...	...	Oligocene.
Kirthar (3,000-9,000 ft.)	...	Middle and Upper Eocene (Lutetian and Bartonian).
Laki (500-800 ft.)	...	London clay.
Ranikot (2,000 ft.)	...	
Cardita beaumonti beds	...	Danian.

Regarding the Salt-Range area (say from the Upper Jhilam westwards), Mr. Wadia tells us that an extensively developed formation in it is the Eocene nummulitic limestone. In the eastern parts is found the Laki series (London clay) as an underlay. The Middle Tertiary, he says, is absent from this area, so that the nummulitic limestone formation changes abruptly and unconformably into the Upper Siwālik, which is Pliocene, Pontian and

Tortonian. In other words, no Oligocene or Lower Miocene strata were deposited in the Salt-Range area (pp. 213, 225).

With Rājputāna I shall deal presently.

As regards Tethys, Mr. Wadia tells us that, in the days when the Indian Peninsula yet formed an integral part of the great Gondwana continent (which must have been prior to, though perhaps also during, the Eocene sub-period), Tethys was completely cut off by its northern transverse mass from the huge southern Sea that was enclosed in the circle of Gondwana; but a deep gulf of Tethys—

> "occupied the Salt-Range, Western Sind, Balochistan, and over-spread Cutch, and at one time it penetrated to the very centre of the Peninsula by a narrow inlet through the present valley of the Narbada" (pp. 174, 175).

Further, he says—

> "The southern sea at the same time encroached on the Coromandel coast, and extended much further north, over-spreading Assam and probably flooding a part of the Indo-Gangetic depression. It is a noteworthy fact that no communication existed between these two seas—of Assam and the Narbada valley—although separated by only a small distance of intervening land" (p. 175).

The entire Siwālik system (16,000 ft.) is divisible into two groups—that of the Kāshmir Himālayas, and that of the Panjāb and Kumāon Himālayas—and each of these, again, is divisible into Upper Siwālik (which is of Pliocene formation), Middle Siwālik (which is of Pontian formation), and Lower Siwālik (which is of Middle Miocene, or Tortonian, formation). Mr. Wadia describes the whole shortly as a system of "fluviatile deposits, clays, sandrock and conglomerate with mammalian fossils" (p. 212).

Indeed, he observes—

> "Tertiary rocks enter preponderatingly into the composition of the outer, lower, ranges of the Himalayas, *i.e.*, the ranges lying outside

(south of) the central zone of crystalline and metamorphosed sedimentary rocks. In fact, the whole of the outer stratigraphic zone, which is known as the sub-Himalayan zone, is almost exclusively constituted of Lower and Upper Tertiary rocks. With the single exception noted below, Tertiary rocks are absent from the ranges to the north of the sub-Himalayas. In the Punjab and Simla Himalayas, where these rocks have been studied, they are disposed in two broad belts, an outer and an inner, formed respectively of the Upper Tertiary and the Lower Tertiary. These strata in all likelihood continue eastwards with much the same disposition, but greatly reduced in width of outcrop along the Kumaon, Sikkim and still eastern Himalayas, forming the outermost foothills of the mountains, separating them from the plains of the United Provinces and Bengal" (pp. 211, 212).

A little further on, however, Mr. Wadia adds—

"At this place must be mentioned the rather exceptional circumstance of the occurrence of Lower Tertiary strata in localities north of the central crystalline axis of the Himalayas. Two or three such have been observed, *e.g.*, North Kashmir (Ladakh), and the Hundes province of Kumaon. Of these the Ladakh exposure is best known. In the Upper Indus valley in Ladakh, to the north of the Zanskar range, there is a narrow elongated outlier composed of marine sedimentary strata, with nummulites and other fossils associated with peridotite intrusions and contemporaneously erupted lava-flows, ash-beds and agglomerates." ...."No strata of younger age than these have been discovered in any part of the Northern Himalayas" (p. 212).

I think Mr. Wadia takes a somewhat wrong view of Tethys in this connection. Tethys was never an epeiric sea within the borders of India. These exceptional marine deposits, therefore, I submit, were not effected by Tethys as a sea which at that period was shrinking *in India*. Rather were they *transgressional* relics left by a Tethys *normally external* to India, at a time when it must have been at its greatest extent. Mr. Wadia had already referred to them at p. 204 of his book, when discoursing on the Tertiary systems. An even earlier reference occurs at p. 177, in his chapter on the Cretaceous System. There, he said—

> "In the general retreat of the Tethys from the Himalayan province at this period, a few scattered basins were left at a few localities, *e.g.*, at Hundes and Ladakh. In these areas the sea retained its hold for a time, and laid down its characteristic deposits till about the middle of the Eocene, when further crustal deformations drove back the last traces of the sea from this part of the earth."

I repeat, however, that in my belief Tethys was *not* "retreating" at this time. It was *trespassing* into areas to which it did not belong. Frequent references are also made to Gondwanaland and Tethys in Pirsson and Schuchert's *Text-Book of Geology*. For instance—

> "The great equatorial land across the Atlantic which had so long united northern Africa to Brazil, was being disrupted by epeirogenic movements during Comanchian time and disappeared beneath the sea during the Cretaceous." ...."Further and more extensive overlaps were of Eocene time. We may therefore say that the present configuration of the Atlantic Ocean had its origin in late Comanchian time" (pp. 880, 881).

Here, of course, the writers (who are American geologists) were concerned only with that portion of Gondwanaland (its extreme western limb) which lay in their own part of the world and more particularly interested them. But what was going on there at certain periods of time, was very probably going on elsewhere, *e.g.*, in regions farther east, throughout the same periods. With regard to what they call "Comanchian time," it must be remembered that the terminology of American geologists is very different from, and considerably more elaborate than, that of older geologists in England. Their Comanchian sub-period was a stage in Mesozoic time, and comes in just between what we call the Jurassic and the Cretaceous sub-periods of the Secondary Era. This, therefore, if well-based, reveals the break-up of

Gondwana-land, at least in its early stages, as an almost unimaginably remote event. How long the disintegrating process went on, is, of course, another matter entirely.

Again—

> "In Europe and Asia, though the marine overlaps were also less extensive than during the earlier eras, Tethys continued in full extent from western Europe into the Malay region and attained its greatest spread in Oligocene time. Its connections with the Atlantic were limited, and for a time it had Arctic connections east of the Urals. The Alps of southern Europe and the Himalayas of India began to rise in the Miocene and then the eastern half of this extensive middle ocean began to vanish more and more. In the Pliocene, Tethys had attained about the area and the general configuration of the present Mediterranean; but in these alterations the remaining areas of former shallow seas had been changed to a chain of great basins of oceanic depths—an epeiric sea had given way to a mediterranean ocean.
>
> In southern Europe, northern Africa, and Asia Minor the stratigraphic and tectonic history is that of Tethys; in eastern Asia, Melanesia and Australasia, the very intricate record is that of the Pacific" (p. 913).

Yet again—

> "On page 880 it was stated that Africa was separated from South America late in Comanchian time (Fig. 488) and now we learn that late in the Eocene the remainder of this equatorial Atlantic bridge sank, since Eocene deposits are general along the western border of Africa. The Cretaceous remnants of Lemuria almost all sank beneath the Indian Ocean during the Tertiary" (p. 924).

For present purposes, a study of the map on p. 191 of the *Text Book of Geology* (Fig. 488 referred to above) will be even more interesting for what it reveals of the stupendous transformation-scene said to have been presented by the Eastern World, say round about India, than it is when looked at only from the more restricted standpoint of American geologists. As regards the great transverse land-mass in the northern hemisphere, Eria (now called Laurentia) remains much the same; the central division (now called Baltica) has shrunk tremendously in width, its southern parts having been completely wiped out, and, except for a few large islands, being now all sea—part, indeed, of the great Southern Ocean. Angara (still so-called) has increased enormously in size, in fact reaching down southwards almost to Australia, and, as regards shape, looking like a gigantic prototype of India. As for old Gondwanaland—it has disappeared. Australia is there, but in a different shape, and nearly double the size it is to-day. All Northern Africa, except a bulge northwards in the north-east, which includes the Red Sea and all Western Arabia, is under water—those seas which have wiped out Central and Mediterranean Europe, Asia Minor, and indeed Asia as far east as Western China; but the new Africa has a considerable extension westwards. South America is represented by a separate mass, smaller than, and differently shaped from, present South America. Still further south, a portion of Antarctica extends upwards a little farther than the extreme southern point of America. This transformed South America is called Amazonia. Laurentia connects with the Arctic North: but Baltica and Angara do not. North of them is an extensive Arctic sea, and some way down into it protrudes a portion of Arctica. Lastly, between the new Africa and the southern end of augmented heart-shaped Angara, lies a long bean-like island-continent, which is called Lemuria—not the Lemuria of the Theosophists. Its northern half embraces and conceals *all* of what eventually became heart-shaped India, from Karakoram to Comōrin—not merely *Southern* India, as Mr. Das imagines and states. The un-filled southern half of Lemuria, at its extremity, points to Madagascar, with link-like islandic formations in between.

Here, then, we see that, by the time of the Middle Cretaceous sub-period, not only has old Gondwanaland completely broken up, dissolved, and vanished, but Tethys also has entirely disappeared, as such !

Of course, what we are just now particularly interested in is the condition of *India*—more especially that part of it wherein *Sapta-Sindhavaḥ* is supposed to have lain. Looking closely at the configuration of Lemuria, as given in this map (Fig. 488), we observe that the territories now known as the Panjāb, western Rājputāna, Sind, Cutch, Kāthiawār, and even down to Bombay, were *just excluded* from the limits of Lemuria. That means that they must have been completely submerged by the waters of the extended Southern Ocean. This seems to carry the matter much further than the position referred to by Mr. Wadia (*Geology of India*, pp. 174, 175) when he says that in late Gondwana days a deep gulf of Tethys occupied these parts, and even penetrated down the Narbada valley to the very centre of the Peninsula—by which, of course, he can only mean that part of old Gondwana where the centre of the present Peninsula *would* have been ; for there was no Peninsula, indeed no individuated India, then ! Not until these submerged regions in the extreme west re-emerged from the ocean, could they have become integral parts of ~~visible~~, above-sea India, as we know India now, or even been *transgressed upon*. I have come across no geological record relating to the approximate date when the re-emergence took place. But, in view of this long submergence, it is clear that—as parts of above-sea visible India—these regions (which, of course, included Sapta Sindhavaḥ) must be very considerably *younger* than the rest of India, *i. e.*, than those main areas of it, including the much depreciated *Southern* areas, which, though concealed or veiled, as India, were embraced in and formed an actually integral part of **islo-continental** Lemuria as above noticed.

It is also to be noted from the above **map, that the** extreme *north-eastern end* of present India **was also** *just excluded* from the limits of Cretaceous Lemuria. **Hence,** these parts too must then have experienced submergence beneath the waters of the extended Southern Ocean. In this connection, therefore, we had better **re-read** Mr. Wadia's remarks about the encroachment of the Southern Sea on the Coromandel coast, the over-spreading of Assam, and the probable flooding of **a** part of the Indo-Gangetic depression (*Geology of India*, p. 175)

Lastly, under the head of "Himalayas of India," Pirsson and Schuchert write as follows—

> "During Eocene time Tethys continued unbroken across Asia Minor, northern India, and Burma into the Indian Ocean and Melanesia. At the close of the Eocene, however, all of the Tethyian area of the Himalayas and Burma began to fold, giving rise to mountains of considerable altitude in many regions, and yet not extensive enough to blot out the sea. During the Oligocene, Tethys, even though shallow, still preserved its continuity, accumulating thick, uniform, marine deposits of gray to greenish shales and calcareous sandstones (Flysch of Swiss geologists). Toward the close of the Middle Miocene, the second and more marked phase of folding began, changing Tethys into a series of disconnected but subsiding basins, accumulating the continental deposits known as the Siwalik clays, sandstones, and conglomerates. Finally, in the Pliocene, came the third and greatest, upheaval, when the Himalayas, the loftiest mountains of the earth, had peaks nearly as high as Mt. Everest of the present, which stands 29,002 feet above the sea. The nummulitic limestones of Eocene age are even now as high as 19,000 feet above sea-level, and once extended higher over the mountain axes" (pp. 924, 925).

Seeing that Tethys, as such, is supposed to have been completely wiped out by the stupendous transformations which, according to Pirsson and Schuchert's map (Fig. 488

abovementioned), occurred all over the world in Middle Cretaceous times, it is not very easy to follow these remarks, unless, of course, we do what these American geologists appear to have done, *i. e.*, apply the name Tethys to the vast oceanic advances northward that are shown in their map. On the other hand, we must avoid doing what Mr. Abinas Chandra Das seems to have done—*i. e.*, apply this name Tethys (or the equivalent that was in his mind) to the big sheet of water, whether marine or otherwise, which is supposed to have covered the Gangetic basin in India at one time in the past. As a matter of fact, as already stated, Tethys was never an Indian sea, *i. e.*, never an epeiric sea anywhere within the limits of India. Except for two comparatively slight transgressions referred to by Mr. Wadia (*Geology of India*, pp. 163, 372)—one represented by the *presumedly Jurassic* limestone deposits in the Sub-Himālayan zone forming the Jammū hills, and another by the *similar* strata in the Tāl series of Nipāl and, of course, the Narmada floodings—Tethys never came south of the main Himālayan line! It was never south of that line even throughout the long preceding ages when the Himālayas were not in existence. The explanation is that the original southern border of Tethys was the northern coast-line of Gondwanaland, as long as that ancient continent endured. That northern coast-line happened to coincide with the synclinic region along which the Himālayas were eventually thrown up. Not only, therefore, are the vast northward advances of the Southern ocean, as shown on Pirsson and Schuchert's map (Fig. 488), open to a suspicion that they are somewhat exaggerated, if the name Tethys is to be associated with them, but it is also clear that Mr. Abinas Chandra Das has mixed up in his mind the idea of the old Tethys (or his equivalent therefor) and the idea of the body of water, marine or otherwise, which, at a very much later date, more or less covered the Gangetic basin—as he says, from Sapta-Sindhū to Assam—and so has introduced no little possible confusion into a subject which it is very necessary to consider clear-headedly. Broadly, then—omitting minor matters, and neglecting all seeming inconsistencies—what happened in the remote past appears to have been this. From early Permian days, up to late Cretaceous, or even perhaps early Eocene times, Gondwanaland was absolutely cut off by Tethys from the great northern transverse Continent: and throughout all those long ages—millions and millions of years—the *entire* territories now known as India were an integral part of Gondwanaland, and were therefore also absolutely cut off *from the North*. Then, in Jurassic times, or in late Cretaceous, or perhaps early Eocene, times (probably all through these several periods), Gondwanaland broke up, dissolved, and—except for divers strangely shaped and isolated masses, some of which are still represented by continental areas like Australia, Africa, and South America, while others have since disintegrated into islandic formations—disappeared. Thereupon the great Southern Ocean—theretofore brooding within the mighty ring-fence of Gondwanaland—swelled or swept up northwards, either effecting the specific and comparatively unimportant transgressions in that part of Northern Gondwanaland which is now called India, spoken of by Mr. Wadia in connection with the extreme western and extreme eastern corners of India (see *Geology of India*, pp. 174, 175), and leaving Tethys still recognizable as such, yet farther north of that, or else wholly obliterating vast tracts of country in the manner shown by Pirsson and Schuchert in their map (Fig. 488), and so, after altogether wiping out Tethys, giving birth to a central congeries of oceanic transgressions, of enormous extent but comparatively shallow—

with which, nevertheless, the name Tethys is supposed to be associated. One particularly interesting result of this gigantic transformation-scene, as represented in the map (Fig. 488), is the appearance, between the new continental formation of proto-Africa and the newly (southwardly) extended land-mass of Angara, of the long, narrowish, bean-shaped island-continent, Lemuria, already referred to. This is shown as *a remnant of vanished Gondwanaland*. The *entire region* now known as India—from say the Pamirs and Karakoram in the north-west to Comōrin in the extreme south except only its extreme western and extreme eastern corners—lies cradled and veiled in the northern half of this curious relic of the mighty old Southern Continent that had once filled up half the Earth. Tethys, which had formerly been conterminous along its southern border with the northern boundary of Gondwanaland, was still—whether as yet recognizably Tethys, or as transmuted into the newly formed and far-extended oceanic areas above referred to—situate *north* of Lemurian "India"; indeed, in the last alluded-to case, *very far north* of it.

Meanwhile, Time goes on. The southern half of Lemuria slowly disintegrates and fades away: and at last *entire* "India" (hitherto concealed in its northern half) appears, carved out very much in the shape in which we see it to-day. But not quite the same. Accessions—not impossibly Jurassic—have come to it from the ocean, in the shape of the extreme western and extreme eastern corners of the present-day extra-Peninsula, which had once been submerged, because lying outside Lemuria. Probably its eventually triangular shape, represented by what is called the Peninsula, was a gradual result of the upward secular washings of the great Southern Ocean, just as (though on a very much bigger scale) enlarged heart-shaped Angara had been similarly formed, ages previously. But the Himālayas were not yet in existence. Indeed, it was not till Pliocene times—millions of years afterwards, and comparatively recent—that they were completely elevated. Really, however, that was only the final phase of a slow secular rise of the Tethyan ocean-bottom, which had been going on quietly since Mid-Eocene times—thus gradually up-lifting the vast layers of marine sediments that had been impereeptibly but steadily accumulating in those parts, including Tibet, since remote Permian times. All along this line of titanic up-heaval the Tertiary system, it must be remembered, exhibits a double facies of deposits—a lower *Eocene* facies which is everywhere *marine* in character, and an upper *Pliocene* facies which is distinctively *fresh-water*, *i.e.*, fluviatile or even subaerial. And this, again, reminds us of what Mr. Wadia says about the Southern Ocean, away back in at least Eocene times, *i.e.*, probably about the time of the secular break-up of old Gondwanaland, having not only encroached on the Coromandel coast, but extended much farther north, over-spreading what is now Assam, and probably flooding a part of what is now the Indo Gangetic depression—apparently about the same time that the transgressions into Balochistān, the Salt Range, Western Sind, Cutch. and down the valley of the Narbada were occurring (*Geology of India*, pp. 174, 175).

From all this, therefore—seeing that Tethys was never an epeiric sea within the limits of India, and only made two comparatively insignificant little *transgressions* south of its usual southern border (*Geology of India*, pp. 163, 372)—it is clear that there never was, and never could have been, any body of sea-water stretching from eastern Sapta Sindhavaḥ eastwards along the Gangetic Trough as far say as present-day Assam, at any time in the past later than those unimaginably remote days which geologists call the *Eocene* sub-period of the early Kainozoic or Tertiary Era.

It will be remembered that two of the principal pillars ostensibly supporting Mr. Abinas Chandra Das's elaborately argumentary edifice in *Ṛig-Vedic India*, were the statements that, eastwards of Sapta-Sindhū, and actually referred to in the *Ṛig-Veda*, lay a vast Miocene, possibly Pliocene, sea, covering the Indo-Gangetic Trough and extending as far as Assam; and that, in another direction, lay the Rājputāna Sea, which "can safely be surmised to have lasted at all events up to the end of the Tertiary epoch," and that therefore the *Ṛik* in which he says that it is mentioned, or alluded to, "must have been composed sometime during that epoch!" (pp. 7-11). Now, what Mr. Das is really driving at, when he speaks of these seas as so existing, and so lasting up to the periods indicated, is this. He is desperately anxious to impress upon the minds of his readers the idea that thereby, throughout long long ages, Sapta-Sindhū must have been completely isolated from the world of Southern India—all intercommunication of an ordinary kind between Sapta-Sindhū and that world being absolutely cut off. His object? To show up in bold relief the fact, or rather his dream, that evolutional development necessarily progressed in Sapta-Sindhū on lines remote and different from those along which it progressed (if, indeed, it did progress) in Southern India. In short, to contrast, as vividly as he knew how, the superiority of "Indo-Āryan" Man in Sapta-Sindhū and the inferiority of rudimentary Anāryan humanity in the unspeakable unthinkable South!

But, alas, I fear that the weight of the geological evidence—both as already adduced and as still to be adduced—is heavily against Mr. Das. First, as to his alleged great Miocene, or possibly Pliocene, Sea, stretching eastwards from Sapta-Sindhū to Assam. Indian geologists do not pretend to know definitely what the physical history of the vast Alluvial Plains of Northern India was, prior to comparatively recent geological times, save that the alluvion was clearly the result of fluviatile deposition which commenced after the upheaval of the **Himālayas**, and continued all through the Pleistocene. This ignorance is due to the fact that the alluvia laid down by river-action are so deep that it has been found impossible to penetrate low enough to admit of studying the underlying strata (*Geology of India*, p. 247). American geologists, however, are of opinion that Tethys once, *i.e.*, *in Eocene times*, covered these vast regions of Northern India. Nay, they hold that this sea persisted there right into *Oligocene* times—the sub-period of the Tertiary Era which immediately followed the Eocene. Indeed, they say, it attained its greatest spread then, though it was shallow. Nevertheless, *before then, i.e., at the close of the Eocene*, these Tethyan areas of Northern India commenced to fold, thus giving rise to the beginnings of the great mountain-system in that part of the world. Towards the close of the Mid-Miocene, the second and more marked phase of this folding began, changing Tethys in Northern India into a series of disconnected but subsiding basins: and finally, in the Pliocene, came the third and mightiest upheaval (*Text-Book of Geology*, p. 925). I do not share these views regarding Tethys as an epeiric sea *within India*: but, if we may analogically judge of the unknown by the known, is it not reasonable to assume that, just as in the extra-Peninsula, throughout Northern India, so all along the trend of these alluvial plains, *marine areas* would in the main have disappeared with the close of the *Eocene* sub-period, or at latest with the close of the *Oligocene*, and were followed in due time by those *fresh-water areas* which came as a result of slow but steady river-action ?

What, then, is now the market-value of Mr. Abinas Chandra Das's asseverations in this particular connection ?

Can it ever again be accorded a place in the quotation-**lists?**

As regards his Rājputāna Sea—which, he maintains, lasted at least up to the end of the Tertiary Era, *i.e.*, up to the close of the Pliocene, by which time, only, the Himālayas had been completely up-lifted—I have even more to say. In short, though Mr. Das has had his dream, there can be no doubt whatever that it has been *only* a dream. There is reason to believe that no such sea *ever even existed* within the limits of historic time! Nay, I strongly suspect that no such Sea has ever been in existence even within the limits of the ages during which Man has been a denizen of Earth! I say this even granting for argument's sake what I really reject—Mr. Das's contention that Man made his *début* sometime during say the late Miocene sub-period of the Tertiary Era. I doubt whether he had appeared before the close of the Pliocene sub-period. All we really *know* is that he was on the Earth sometime during the Pleistocene sub-period of the Quaternary Era. But, as I say, let us grant that he had appeared in the late Miocene. At a moderate computation that period lasted 850,000 years. Probably it lasted much longer. Be this as it may, Geology reveals the fact that it was as far back as early *Eocene*, perhaps *Cretaceous*, times—perchance even late *Jurassic* times—that *sea-water* spread into and temporarily (*i.e.*, temporarily in a geological sense) occupied Balochistān, the Salt-Range, Western Sind, and Cutch, and even penetrated by a narrow inlet into what became Central India along the Narbada valley. Even here, be it noted, nothing is really said about Rājputāna as a whole; the Salt-Range was a mere district away up north, west of the upper Jhilam. Mr. Wadia says these encroachments were made by **Tethys.** He knows his subject: nevertheless I doubt whether he is entirely right. Possibly, indeed probably, the temporary flooding of the Salt-Range *was* connected with "transgressions" made by Tethys—though an *external* Tethys—into Kāshmir and Nipāl: but the rest of the encroachments at that time seem to me to have been clearly only transgressional and temporary too, or *may* have been by the Southern Ocean. Now, early Eocene must have been millions of years before late Miocene; Cretaceous times still earlier; and Jurassic times *many* millions of years before. Geologically speaking, as already noticed, these "encroachments"—if such they all were—were only temporary affairs. Very soon, therefore (again geologically speaking), the *marine* over-floods vanished, leaving only their deposits, as still traceable. From that time, whenever it was—and it was certainly millions of years ago—*sea-water* has been unknown in those parts! Thus, then, matters have remained, right up to historical times. At least, Geology tells us nothing to the contrary. In other words, for millions of years back from now, Rājputāna, as a whole, seems to have been, if not always the dry desolate waste that it is to-day, at least *not a marine area!*

Mr. Wadia describes it thus—

> "The large tract of low country, forming Rajputana, west of the Aravallis, possesses a mingling of the distinctive characters of the Peninsula, with those of the extra-Peninsula, and hence cannot with certainty be referred to either. Rajputana can be regarded as a part of the Peninsula inasmuch as in geotectonic characters it shows very little disturbance, while in its containing marine, fossiliferous deposits of Mesozoic and Cainozoic ages it shows greater resemblance to the extra-Peninsular area. In this country, long continued aridity has resulted in the establishment of a desert topography, buried under a thick mantle of sands disintegrated from the subjacent rocks as well as blown in from the western sea-coast and from the Indus basin. The area is cut off from the water-circulation of the rest of the Indian continent, except for occasional storms of rain, by the absence of any

high range to intercept the moisture-bearing south-west monsoons which pass directly over its expanse. The desert conditions are hence accentuated with time, the water action of the internal drainage of the country being too feeble to transport to the sea the growing mass of sands.

There is a tradition, supported by some physical evidence, that the basin of the Indus was not always separated from the Peninsula by the long stretch of sandy waste as at present. 'Over a vast space of the now desert country, east of the Indus, traces of ancient river-beds testify to the gradual desiccation of a once fertile region; and throughout the deltaic flats of the Indus may still be seen old channels which once conducted its waters to the Rann of Cutch, giving life and prosperity to the past cities of the delta, which have left no living records of the countless generations that once inhabited them' (Sir T. H. Holdich, *Imperial Gazeteer*, Vol. I)" (*Geology of India*, pp. 5, 6).

Again, Rājputāna has a group of salt-lakes: and naturally, with visions of a former Rājputāna Sea connected with *Rig-Vedic* times flying around, one is inclined to wonder whether these may not be surviving remnants of such a sea. But, should any such idea enter our heads, it seems we must eject it, quietly but resolutely. On this subject Mr. Wadia writes as follows—

"Of the four or five salt-lakes of Rajputana, the Sambhar lake is the most important. It has an area of ninety square miles when full during the monsoon, at which period the depth of the water is about four feet. For the rest of the year it is dry, the surface being encrusted by a white saliferous silt. The cause of the salinity of the lake was ascribed to various circumstances, to former connection with the Gulf of Cambay, to brinesprings, to chemical dissolution from the surrounding country, etc. But lately Sir T. H. Holland and Dr. Christie have discovered quite a different cause of its origin. They have proved that the salt of the Sambhar and of the other salt-lakes of Rajputana is wind-borne; it is derived partly from the evaporation of the sea-spray from the coasts and partly from the desiccated surface of the Rann of Cutch, from which sources the dried salt-particles are carried inland by the prevalent winds. The persistent south-west monsoons which blow through Rajputana for

> half the year, carry a large quantity of saline mud and salt-particles from the above sites, which is dropped when the velocity of the winds decreases. When once dropped, wind-action is not powerful enough to lift up the particles again. The occasional rainfall of these parts gathers in this salt and accumulates it in the lake-hollows which receive the drainage of the small streams. It is calculated by these authors, after a series of experiments, that some 130,000 tons of saline matter is annually borne by the winds in this manner to Rajputana during the hot weather months" (*Geology of India*, pp. 22-23).

We are told that—

> " After the emergence of the Peninsula at the end of the Vindhyan system of deposits, this part of India has generally remained a land area, a continental table-land exposed to the denuding agencies. No extensive marine deposits of any subsequent age have been formed on the surface of the Peninsula since that early date.
>
> In the Jurassic period, however, several parts of the Peninsula, *viz.*, the coasts and the low-lying flat regions in the interior, like Rajputana, were temporarily covered by the seas which invaded the lands " (*Geology of India*, p. 168).

These encroachments, as Mr. Wadia calls them, over what was previously dry land, are, he says, not uncommon in the records of several geological periods: but they were always of a temporary nature.

> " Such invasions of the sea on land, known as 'marine transgressions,' are of comparatively short duration and invade only low level areas, converting them for the time into epi-continental seas " (*Ibid*).

Amongst other instances of such deposits—sometimes, as a whole, designated the "Coastal System"—are the Upper Jurassic of Cutch and Rājputāna. True, therefore—

> " The inroads of the Jurassic sea penetrated much farther than Cutch in a north-east direction, and overspread a great extent of what is now Rajputana. Large areas of Rajputana received the deposits of this sea, only a few patches of which are exposed to-day, from underneath the sands of the Thar desert. It is quite possible

that a large extent of fossiliferous rocks, connecting these isolated inliers, is buried under the desert sands " (*Ibid*, p. 172).

" Fairly large outcrops of Jurassic rocks occur in Jaisalmer and Bikaner."

" Jurassic rocks are also exposed in the southern part of Rajputana where a series of strata bearing resemblance to the above ". (the Cretaceous Balmir beds, previously referred to by Mr. Wadia ?) " underlie directly Nummulitic shale beds of Eocene age " (*Ibid*, p. 173).

It is on the strength of these Secondary strata, and the other Tertiary strata, " stretching across from Sind, beneath the sands of the desert, toward the flank of Aravalli," that Mr. Das ventures to base his statement that the Rājputāna Sea lasted at least up to the end of the Tertiary (*Rig-Vedic India*, p. 7).

But note *when they occurred*—in the Jurassic sub-period of the Mesozoic Era ! That sub-period actually preceded the Cretaceous. It even preceded the Comanchian interval of American geologists. It was the age of the great Saurian monsters of the Prime, the higher reptiles—Theropoda, Sauropoda, and the like. And the Cretaceous preceded the Eocene—which, indeed, introduced a wholly different Era. Well, if, for practical purposes, the Eocene was unimaginably remote, how much more so must these Jurassic times have been !

But let us consider. Were these Upper Jurassics, which cover such large areas in Rājputāna, Cutch, etc., really mere " Coastal Deposits " of the kind above alluded to ? There is surely another alternative, though not even Mr. Wadia seems to have thought of it. Not impossibly they may relate back to the distant days spoken of above, when the extreme western corner of the extra-Peninsula, not having formed an integral portion of ancient islo-continental Lemuria, in whose northern half all " India " lay as it were cradled and concealed (Fig. 488), must have been submerged for an unascertained but probably considerable time beneath the waters of the extended Southern Ocean. In that case we may probably take it for granted that the dissolution and break-up of Gondwana-land really began as far away back as sometime in the Jurassic sub-period of the Mesozoic Era.

Elsewhere Mr. Wadia tells us that what he calls "the aeolian accumulations of the great desert tract of India, known as the Thar,", are "of the same age as, or slightly newer than, the alluvial formations" which he had just been dealing with, *i.e.*, the vast fluviatile deposits, reaching to a depth of over 1,300 feet below ground-surface level, and nearly 1,000 feet below sea-level, which are now represented by the Plains of Northern India—"covering the largest portion of Sind, Northern Rājputāna, the whole of the Punjab, the United Provinces, Behar, Bengal and half of Assam" (*Geology of India*, pp. 249, 253).

Now, the formation of this Indo-Gangetic Alluvial Area only commenced *after* the final upheaval of the Himālayas, and it has continued "all through the Pleistocene up to the present" (*Ibid*, p. 247). In other words, it is of Early Quaternary, *i.e.* (speaking geologically), of comparatively recent, though absolutely incalculably old, formation. And—here we come to the point of these remarks—the wind-blown accumulations of the Thar, which, it seems, give to Rājputāna that arid, desert appearance which it presents to-day—as though it had once constituted the bottom of a former local sea—are *even younger* than these great though comparatively juvenile alluvial Plains!

On Mr. Das it seems to have acted as a veritable mirage!

With the complete evanishment into the thinnest of thin air of Mr. Das's beautiful dreams regarding his Miocene, or Pliocene, or Pleistocene *Ṛig-Vedic* "Indo-Aryans" in Sapta-Sindhū, and the oceans by which he thought they were surrounded, away also into the same thin air disappear all those other ambitious theories about the origins of outside western races and cultures which he has striven so ingeniously to elaborate in his book. It is unnecessary, therefore, to deal with them at all.

If, then, the Gangetic basin, from Sapta-Sindhavaḥ to Assam, considered as a *marine area*, was only a thing of remote old Eocene times, possibly even late Cretaceous times, and, whatever it was after that and up to Pliocene times, became a *fluviatile area* sometime during the Pliocene sub-period, *i.e.*, about, or not long after, the tectonic appearance of the Himālayas—the days, say, when the Siwāliks were a notable stronghold of the Anthropoids, and Man had probably not even yet made his *début* upon the Earth; and if the various marine deposits in the extreme western corner of the extra-Peninsula, *i.e.*, in Sind, Cutch, and the Salt-Range—say also in the Jammū hills—pointing to sea-encroachments there, effected either by the great Southern Ocean or by an external Tethys north of the northernmost point of India—are also referable to approximately early *Eocene* times; and if, except for remote and transitory coastal deposits, Geology reveals nothing as to Rājputāna itself having ever been covered by sea-water, and the salinity of its several Salt-Lakes and even its generally arid aspect to-day can be accounted for in the definite way that Sir T. H. Holland and Dr. Christie do account for them; in short, if, not only throughout historical and proto-historical times, but even throughout the ages during which Man may be supposed to have been upon the Earth, there is nothing to show that any Rājputāna Sea ever even existed, much less lasted up to the end of the Tertiary Era, *i.e.*, up to the close of the Pliocene sub-period of that Era: what becomes of Mr. Abinas Chandra Das's case? Nothing seems to remain but to dismiss it. This I, at least, feel constrained to do on the evidence, even as examined only so far—yet not without congratulating him on the industry and knowledgeableness which alone could have collected so great an array of assorted materials as that shown in *Ṛig-Vedic India*, and on the ingenuity and enthusiasm with which, albeit unsuccessfully, he has placed those materials before the Court, *i.e.*, the reading public. He has at least erected a Sign-Post which serves the very useful purpose of warning us not to venture into the Oceanic wastes and arid deserts that he talks about, but to pursue our literary wanderings elsewhere. Inspite of his apparently unbounded credulity—in all matters touching Sapta-Sindhu and the "Indo-Aryans" who, he thinks, lived there in Miocene times, as highly civilized men—he does seem to have thought things out for himself. That alone entitles him to our felicitations.

The First Outlines of a Systematic Anthropology of Asia

(*With Tables of Stature, Cephalic Index and Nasal Index of living subjects.*)

BY

PROF. V. GIUFFRIDA-RUGGERI.

Translated from Italian

BY

HARANCHANDRA CHAKLADAR, M.A.,

REVISED BY THE AUTHOR WITH ADDITIONS.

INTRODUCTION

A fact which is of great importance for the future of anthropology and which has escaped the notice of superficial observers of the anthropological movement—of those who seek for some anatomical novelty, losing sight of the true scope and object of our studies—is the new compilation made in late years of anthropological tables much more extensive and ample than the old and antiquated ones of Topinard (and this has naturally followed from the accumulation of the huge mass of materials that have been recently studied). It may well be conceived that if these old tables, although incomplete, have in the past been of so much service whenever one undertook the somatic study of any population of the earth, so much more will the new tables, which represent an incomparably superior and better instrument of work and which greatly reduce the labour of supplementary research, prove—and they have already proved—to be useful to students of anthropology. The tables which have been drawn up in the early years of the present century, are due to three eminent anthropologists, universally known, not for their personal opinions—which some people go prying about for the proper estimation of unknown celebrities—but for the immense service that they have rendered to the progress of our studies, and they are, mentioned in the order of publication of their works: Deniker,[1] Ivanovski,[2] and Martin.[3] Whosoever has undertaken a study of anthropology—not purely morphological, or anatomical, since in such a case it is necessary to have recourse to other branches of science—whoever has had to lecture on anthropology, knows how much trouble has been spared in research and with what rapidity things can be acquired and mastered by making use of Deniker or Martin in place of Topinard and Ranke. In this way is being achieved a continuous progress *in toto*, which attests to the maturity and autonomy now attained by our science.

Of course it is not to be thought that there is no defect anywhere and that the work already done is above all criticism. On the contrary, it is certainly our duty—however disagreeable—to be very much on our guard with regard to the data, supplied by Martin's tables owing, it may be, either to the confirmed ill-health of the author—for which reason he left the public chair which he had rendered illustrious at Zurich—or to the excessive confidence placed by him in some of his collaborators, as is quite probable. I give a few examples, with the hope that in a second edition of the valuable Lehrbuch the errors of the tables will be corrected.

---

[1] DENIKER (J.), *Les Races et les Peuples de la Terre*. Paris, 1900, Appendices.

[2] IVANOVSKI (A.A.), *Naselenie Zemnogo sciara*. Moscow, 1911.

[3] MARTIN (R.), *Lehrbuch der Anthropologie in systematischer Darstellung*. Jena, 1914.

In the table of stature there appears on page 213, an author "Gischiga" who had measured the Jukagiri and the Tungusi: everything instead shows that here we have to do with Mrs. Jochelson-Brodsky, and that Gischiga is not an anthropologist, but is only a district of the extreme N. E. of Siberia called by that name or rather Ghiscighinsk. Checking individual figures, we may correct several: for example, the average stature of the Igorot ♂ given by Bean is 1540 mm. and not 1549, that of the Semangs ♂ measured by Annandale is 1528 and not 1520 which represents the span between the arms. An error has crept in with reference to the Kayans indicated by the statures ♂ 1572 and ♀ 1440, which are erroneously attributed to Haddon, while instead we have here those measured by Nieuwenhuis and published by Kohlbrügge: the 21 Kayans ♂ of Haddon have the average of 1550 and do not appear in Martin's table.

The same inaccuracies can be pointed out in the table of the cephalic index on page 674 for the Kayans ♂ and ♀ who are attributed to Haddon but belong instead to Kohlbrügge. On page 672 the cephalic index 79·9 of the Lepchas is attributed erroneously to Legendre while it appears in the "Census of India" for 57 Lepchas of Sikkim.

In the table of nasal index there are given some data that cannot be compared with one another on account of the technically different methods adopted for the measurement of the nasal length or, as it is sometimes improperly called, the nasal height. It can be measured by the method of taking a shorter length, *viz.*, the distance from the point of the lowest depression of the nasal dorsum (instead of the nasion) to the sub-nasal point and since, for getting the nasal index one has to take this length as equal to 100, therefore, if this is smaller, the nose appears larger, *viz.*, we get a higher figure as the nasal index. Thus the figures obtained from the natives of the Philippines by Bean who adopted the lowest point of the depression " between the eyes "[1] have to be omitted in the table on page 448 of Martin : and moreover, Bean himself says that his indices are not to be compared with those of other authors. I think also that the nasal index of 70·2 for the Soiots measured by Gorotscenko (referred to by Mrs. Jochelson-Brodsky, but perhaps by a misprint) is to be changed into 76·2, as we find it in the tables of Ivanovsky. Finally, we fail to understand why Martin gives 66·7 as the nasal index for the Ainus measured by Koganei: for the Ainus of Jeso I have obtained from the figures of Koganei 68·0 as the index and for the Ainus of Sakhalin (who are only 8 in number) 71·7.

Moreover, everything relating to the geographical distribution of the people in the tables of Martin leaves much to be desired : it would suffice to say that Martin places in Asia many peoples who are inside the geographical boundaries of Europe : the Syrians (" Zirianen," who are not to be confounded with the Syriacs), the Permiaks, the Baskiri, the Osseti, the Tatars of Cazan measured by Sucharew, the Calmuks that were measured by Vorobieff and by Koroleff and belong both to Astrakan.

The three tables in the " appendix " of Deniker do not show the names of the particular authors with regard to stature and cephalic index : only in the case of the small table of nasal index are the names of the authors given. As regards Asia, I found the data given by Deniker, in general, accurate, although a few trans-caucasian peoples are found assigned to Europe, to facilitate the common treatment of the whole Caucasus which is adopted in the text. These data I have transcribed in my tables, and I have indicated them by the letter *D*, omitting the names of the individual authors anterior to Deniker and utilised by him. It is only necessary to call attention to the fact that the 332 Curds whose cephalic index Deniker gives on p. 669 as 78·5, and who certainly are the same as those of Chantre, are not all ♂ but 62 ♀.[1]

---

[1] BEAN (R. Bennet), *Filipino Tipes : Racial Anatomy in Taytay. The Men.* The Philippine Journ. of Science, IV, 1909, n. 5, p. 378.

I have found Ivanovsky's tables extremely accurate and I have transcribed by far the larger number of the data from them, indicating them by Iv.,[2] thus omitting the authors utilised by him whose names can be verified from his tables: from these also I have drawn almost all the percentages which are seen in my tables, according to the subdivisions of Ivanovsky. I have omitted nearly all the series containing less than 10 individuals which are very numerous, although not entirely useless.

A fact to be taken into consideration is the arrangement of the material. This has been done by Deniker and by Martin in the simplest way, distributing, that is to say, the material into just as many sections as there are parts of the globe; to this Ivanovsky had added Russia, taking out the Russian territory from Asia and from Europe. This innovation, if it shows up the enormous anthropometric work accomplished by Russian anthropologists which can be cited to the honour of a generation now gone out, is not, however, an innovation destined to be perpetuated, it not being rational, and, moreover, being surpassed by historical events.

---

[1] CHANTRE (E.), *Recherches anthropologiques dans l'Asie occidentale.* Arch. du Museum d'Hist. Nat. de Lyon, T. IV, Lyon, 1895, p. 102. Besides, this ind. is to be taken with great caution, in as much as Chantre asserts (*Ibid.* p. 113) that almost all the Curds have deformed cranium, the ♀ a little less.

[2] Indirectly I have also made use of the older work of IVANOVSKY (A.A.), *Ob antropologhicesckim sostavje naselenija Rossij.* Moscow, 1904 (unfortunately—under the present conditions—I have not been able to procure a copy).

Of the other authors, I shall mention that Mrs. Jochelson-Brodsky, on her return from the "Jesup Expedition," published in 1906, two tables, one of the stature, and the other of the ceph. index " of the ural altaic peoples and of the other peoples of north-eastern Asia,"[1] making known to the west the great progress that the anthropological study of these peoples had made in the Russian empire, and adding a few new facts from that useful "Expedition," which, however, notwithstanding the high patronage of the "American Museum of Natural History," has not yet published all the anthropometric results. The comprehensive designation of these peoples is however so confusedly arranged as to place the Lapps alongside the Torguts, the Chukchi beside the Tatars of Cazan, the Chinese next to the Baskiri and so on.

I believe that we should consider this first period of preparation of the materials of study as at an end and that we may pass on to the second period, when we should try to find some logical orientation among such data as have gone on accumulating; this orientation can perhaps be realised by distributing the peoples as if they could be classified in varieties and sub-varieties, allocating them in a provisional scheme and overlooking all that,—unfortunately a great deal—which we ignore about them. The objection is obvious: the peoples represent ordinarily mixtures of many varieties. Nevertheless we do not consider it convenient to adopt the system of having pure series (Sergi): it would be very easy to set aside all that which does not fit in well enough, but naturally would thus be so much the less convincing for others. It is necessary instead to take the ethnic groups just as they are, that is to say, more or less mixed up, and to bear in mind that the *taxonomic classification satisfies the majority in each series examined.* When one deals with some ethnic groups that are little known, or for whom the taxonomic classification of the majority appears to be very little clear or impossible owing to pronounced admixture, one has to desist from such classification : thus, for such groups we have the designation of "unclassified groups." Of course, it is not to be supposed that all the individuals of such groups are unclassifiable; on the contrary every individual could very well be classified by physical anthropologists. It is, instead, the ethnologist who cannot pronounce with regard to the classification of the ethnic group, since it is one thing to take into consideration, for example, every Japanese, and another thing to consider the "Japanese" people as we necessarily have to do in our tables. An arbitrary procedure does not advance science, while in many cases we have to leave to the future the task of drawing these people out from the limbo of the unclassified. They meanwhile represent problems for students to work at. As Pittard has rightly observed : "There will certainly come a day when anthropology will disentangle the skein of the Asiatic people. That will be when we have entirely got rid of all the linguistic and political etiquettes which encumber the road without any profit to science."[1]

---

[1] JOCHELSON-BRODSKY (D.), *Zur Topographie des weiblichen Körpers nordostsibirischer Völker*. Arch. f. Anthrop. N. F., V., 1906, pp. 7, 12.

---

[1] PITTARD (E.), *Anthropologie de la Roumanie. Les peuples sporadiques de la Dobrudja : III Contribution à l'etude anthropologique des Kurdes.* "Bull. Soc. Roum des sciences" xx, n. 1, p. 65. Bucharest. 1911.

I

To proceed to a *naturalistic classification* we wish to examine Matthew's hypothesis that the primitive centre of dispersion of the *Hominidæ* was situated in central Asia, and that the first waves of distribution proceeded to the south of the great range of mountains, whose E. W. direction represented a protective defence for those early Hominidæ.[1] Besides the tropical forests on the continent, the insular habitat in the islands in the Indian Ocean and the Western Pacific, must have served as so many areas of preservation for particular sections of these first human groups. According to Matthew the same distribution must have taken place on general lines for all the Primates[2]: the South-American centre of dispersion is relegated to the domain of fable.

We do not think that the hypothesis of Matthew is absolutely opposed to ours, which was given by us at the same time as his,[3] namely, that there have been three genetic centres of the races in Asia—one for the Eurasiatic North (formation of the Leucoderms), another for eastern Asia,[4] whence the formation of the yellow stock and its derivatives in America and in Oceania, and a third for the southern regions of the ancient world. In fact, the two first centres may be contiguous if we place them, for instance, towards Zungaria. If we place a single filum of ancestral representatives in central Asia, and admit that the passage of the southern barrier was effected in successive waves, then it follows that, even with such a hypothesis, the third genetic centre placed by us in the southern regions, can be connected originally with central Asia. In other words, the unity of the filum is anterior to the differentiation, contemplated in our hypothesis.

---

[1] MATTHEW (W. D.), *Climate and Evolution*. Annals of the New York Academy of Sciences.

[2] MATTHEW (W. D.), loc. cit. Figures 6 and 7 show exactly the same geonemic behaviour for man and the other Primates : in fig. 6 the Negritos are erroneously assigned to Africa.

[3] GIUFFRIDA-RUGGERI (V.), *La cosí detta culla dell' umanità*. "Riv. Ital. di Sociol." xix, fasc. V-VI, 1915, p. 533.

[4] In my article refd. to, p. 538, "Western Asia" was a misprint for eastern. I think that Prof. Boule has rightly adjudged my hypothesis as "a sort of conciliation between the monogenists and polygenists" ("L'Anthropologie," xxviii, 1917, p. 598).

The hypothesis of Matthew is in favour of heterochronism, so that we can complete it in the form of a scheme for Asia, distributing as follows all the Asiatics of the present day :

(*a*) Groups of the 1st cycle of migrations: Protomorphs and (secondly) metamorphs of India and the Philippines, the Ainus, Negritoes, Australoids (Veddah, Toala, etc.), Dravidians.

(*b*) Groups of the 2nd cycle of migrations: Leucoderms, Mongolians, Indonesians.

That Asia was inhabited in Palæolithic times, when the fauna was different from that at the present day is a fact that has been already demonstrated: Deniker[1] notes the association of instruments of quartzite with the bones of extinct animals in the ancient alluvium of the rivers Nerbudda, Krishna and Godavari[2] and records other instruments in Siberia beside the skeleton of a mammoth broken to pieces. What some of the ancient inhabitants may have been we may surmise from the excavations of Turkestan, which have yielded elongated crania with non-mongoloid features,[1] but this does not enlighten us about the origin of the most important stock for the Asiatic continent, which is precisely *Homo Asiaticus* (L.), or *Homo orientalis*.

---

[1] DENIKER (J.), op. cit., p. 423.

[2] Of this and other discoveries which have taken place in India a very valuable sketch has been lately published by PANCHANAN MITRA, *Prehistoric Cultures and Races of India. A Preliminary Review.* "The Calcutta University Journal of Arts," Vol. I, Calcutta, 1919, pp. 137 ff and also *Prehistoric Arts and Crafts of India.* University of Calcutta. Anthrop. Pap., No. 1, Calcutta 1920. For other parts of Asia consult BOULE (M.), *Les hommes fossiles*, Paris, 1921. pp. 354 ff.

To go further back as Klaatsch did with that futile hypothesis which Keith has called pan-anthropoid,[2] somewhat in derision, is not our task.

Let us content ourselves therefore, necessarily, with the present data and appreciate them as already done by De Quatrefages from a purely systematic point of view. Moreover, we believe that the human fossils of Europe appertain to another cycle of migrations, anterior to those here considered.

The characters of *H. Asiaticus* have been given by a large number of authors. Biasutti, last and most complete of all, mentions:[3] leiotrichy, brachyskelic (thick and short) somatic proportions, Mongolian eye, and characteristic flatness of face, which together with the projection of the zygomatic bones constitute the Mongolian face. One may say that *H. Asiaticus* is recognised by the face: "it represents a low relief in all its parts: the slightly retreating forehead passes without the relief of superciliary arches on to the medium facial plain where the long nasal bones, narrow and flat, are inserted without depressions at the roots, while the large zygomatic bones protrude forward and beyond; so that the nasal dorsum emerges little from the cheeks which are large and full; the eyes with their Mongolian fold are at the surface of the head; alveolar prognathism is wanting (at least in the pure forms) and instead there is a certain projection forward of the whole of the upper face in continuation of the plain given by the forehead. The mandible is high, wide transversally and with the chin sometimes a little prominent. The face, high and broad as it is, appears of large dimensions."

---

[1] SERGI (G.), *Dalle esplorazioni del Turkestan*—"Atti Soc. Rom. Antrop." xiii, 1907, fasc. III, fig. 2, etc.; also of the same author, *Europa*, Turin, 1908, pp. 431 ff.

[2] KEITH (A.), *Klaatsch's Theory of the Descent of Man*, Nature, lxxv, Febr. 16. 1911; pp. 508-510.

[3] BIASUTTI (R.), *Studi sulla distribuzione dei caratteri e dei tipi antropologici.* "Memorie Geografiche." (Suppl. "Riv. Geogr. Ital"), 1912, N. 18, Florence, pp. 121 et seq.

From the systematic point of view these are all characteristics not deeply marked: they are very little more than the characteristics of a sub-species, even adding the two integumentary characteristics of the cutaneous coloration, more or less yellow in tone, and of the scant hairiness of the body. Although the habitat of this little species is very vast and situated at various terrestrial heights, the internal homogeneity of the characteristics is such as to present only slight regional modifications of the type.

If the morphological facts described above do not permit any subdivisions into varieties—and that is natural, since they appertain to all the component parts of the species, *H. Asiaticus*,—there are yet other characteristics to be taken into consideration, which might not be the same for all; these are the shape, short or long, high or low, of the cranium, as appears from diverse indices (ind. of width-length and of height), the stature and the nasal index. Really these characters are the best for the subdivision of *H. Asiaticus*, as for the subdivision of other human species, and practically they have been already utilised in the descriptions that have been given (for example, by Deniker) about this or that 'population.' Those summary notices which we read at the end of every description (average stature, ceph. or nas. index, generally of the living) should be completed and collected together in a systematic table. But a systematic exposition of these three characteristics, or better, of their averages—eventually also of other characteristics, *e.g.*, the facial index—can only be obtained by adopting a systematic classification of the populations : a simple succession of figures in ascending or descending order, or of the peoples in an alphabetical order, resembling the lists published by Deniker, by Ivanovsky or by Martin, is without importance for the purpose of subdividing the species *H. Asiaticus*.

A glance at any one of these three lists shows at once, that the *cephalic index* of the so-called Mongolians and their kindred does not present such a uniformity of brachycephalism, as to render this character useless for the subdivision of *H. Asiaticus* : on the contrary, this species includes as many dolico-mesaticephals as brachycephals, and the first, in my opinion, are the morphological predecessors of the second. If we add the criterion of the relative height of the cranium, as has been done by Biasutti with the help of the index of width-height in his Map VII, the uniformity disappears entirely, giving place to a distinction of areas and zones more or less circumscribed, which is of the greatest interest for the purpose of the subdivision of *H. Asiaticus,* sought by us. In Map VII of Biasutti we find the extreme N. E. Asia forming a quite distinct zone : it is an area in which the average cephalic index varies from 81 to 82·9 in the living subjects and in which plati-cephalism is not very prominent. This area is inhabited by the Chukchi and the Asiatic Eskimo : both of them appear in our classification as *H. Asiaticus neoarcticus*, in consideration of their kinship with the American Eskimo who really appertain to the same variety.

Proceeding towards the west we find other distinct zones for the ceph. index: all the remaining portion of Siberia, with the exclusion of the Samoyeds, the Soyots and the Yenisseian Ostyaks, show a ceph. index varying on an average from 78 to 82·9 in living subjects, while platicephalism attains its maximum of frequency, that is to say is more than $\frac{3}{4}$. To this zone we assign *H. Asiaticus palæoarcticus*[1] which is comparatively dolichomesaticephalic, and *H. Asiaticus altaicus* which tends more towards brachycephalism. The distinction however depends upon other differences and is based specially upon a study of the now almost extinct Yenisseian tribes, whom we conventionally call "Altaic." We put together the Samoyeds, Soyots and the Yenisseian Ostyaks in a brachycephalic sub-variety: *Palæoarcticus brachymorphus.*

Proceeding towards the south we find two zones of clear and distinct brachycephalism : one represented by Manchuria and by the contiguous maritime zone, the other represented by central Asia. The whole of the latter area however does not appertain to *H. Asiaticus,* as we must separate from it the area inhabited by the Galchas, the Tajiks and other kindred Pamirians, who we maintain, differing from Sergi, have nothing of the Mongolian in them.[2] These being left aside there remains a nucleus of true Asiatics with ceph. ind. above 83 and with more than $\frac{3}{4}$ of platicephals whom we put collectively with the Manchus : both (that is to say, the Manchus and the other Mongolians of Central Asia) appear in our classification, conventionally, as *H. Asiaticus centralis.*

Still further to the south there are prominent two areas, Tibet and China (with Corea), both with a slight tendency towards brachycephalism, having average ceph. indices from 79 to 82·9 in living subjects. The Chinese and the Coreans show also a great tendency towards hypsicephalism having from ½ to ¾ of hypsicephals, who are not found among the Tibetans. The first are considered by us as typical *H. Asiaticus* while the second appear as *H. Asiaticus tibetanus.*

---

[1] Really the Palæoarctic zone is much more extensive and includes almost the whole habitat of *H. Asiaticus* : it is useless to say that we have to do with denominations which have only a geographical approximation, for a mnemonic purpose.

[2] Giuffrida-Ruggeri (V.), *A proposito di alcuni risultati antropologici della spedizione De Filippi al Caracoram.* Rend. R. Acc. Sc. Fis. and Mat. di Napoli. Ser. 3a, Vol. XXIV, 1918. It is therefore not possible for me to follow the system of Sergi, which has been newly taken up by Frassetto and which I consider to be rather misleading.

Last of all there remains Indo-China which in Map VII of Biasutti present the whole variation of the ceph. ind., while the somewhat high percentage of hypsicephalism characterises them. Of the various areas which may be distinguished in Indo-China, the most extensive one appears to be that which goes towards the Gulf of Siam, in which there is confirmed brachycephalism with indices of 83 and more on an average in living subjects. The natives who show this strong brachycephalism have been denominated by us *H. Asiaticus meridionalis*; while the others who show Dolicho-mesaticephalism have been called *H. Asiaticus protomorphus.*

Let us now examine Biasutti's other maps and draw conclusions from them. Map IV, which relates to stature, also shows that there are distinct zones and areas. One of them appears clearly to be confined to the extreme N. E.: the area of the Neo-arctics above mentioned, whose stature is rather low. Lower still is that of all the Palæoarctic peoples. A perceptible rise is seen in the Altaics according to the tables transcribed by me (*cf.* tab. 1), although they always remain below the average. Nor are the great majority of ethnical groups in Central Asia tall, not even the Chinese and the Coreans. Of low stature are the people of Indo-China and the Tibetans, leaving aside a few groups. One may conclude that *H. Asiaticus* is essentially of low stature, having only some local groups of high stature ; but, even in the very slight oscillations of this characteristic, certain lines coincide with those that I have shown for the ceph. ind., confirming the existence of some distinct human varieties.

Also in Map VI of Biasutti which is devoted to the variations of the nasal index, the extreme N. E. is seen isolated by a high grade of leptorrhiny which is characteristic of the Eskimos and of the Chukchi, while the extreme S. E., that is to say, Indo-China, is distinguished by the opposite feature. In analogy with the nasal index are distributed the variations of the fac. ind., which are seen in Map V of Biasutti. While among all the great mass of the Palæoarctics, the Altaics and the central Asiatics, the face is predominantly mesoprosopic (fac. ind. 83-85·9), the extreme N. E. is distinguished by a certain frequency of leptoprosopy, which agrees with the low nasal index, and this also is seen in the Chinese of the north and in some groups of Central Asia. The opposite fact is observed in Indo-China, and this is in accord with the high nasal index (platyrrhiny).

I pass over the Ainus and the Japanese : the first, because they have been considered by Biasutti as one of the most ancient branches of *H. Oceanicus.* Certainly here we have a local form whose relationship to *H. Asiaticus* has very little support and that only in the colour of the skin. We, instead, allocate them among the protomorphic relics,[1] who have been placed in the last three tables.

The Japanese, about whom there can be no doubt that they are Xanthoderms, have been allocated to the unclassified groups of these, it not being possible to use the average of their anthropological characteristics for the reason that the averages are obtained from values differing much from each other: many varieties, some of which do not at all belong to *H. Asiaticus*, have entered into the composition of the Japanese people, and in very remarkable proportions. The same may be said of many peoples of Indo-China. Undoubtedly the Chinese also are not homogeneous; but their impurity and mixture, which are manifest in the north and in the south, are not, considering the large ethnic mass, so serious as among the Japanese. Therefore, we consider *H. Sinicus* as quite the same with *H. Asiaticus*, giving to the latter a concrete and adequate connotation.

---

[1] We shall return to them at the end of this essay.

The variety *protomorphus* is based principally on the results of the "Census of India"[1] which shows that Assam is peopled by mesaticephalic, meso-platyrrhines of low stature, who are also found here and there in Southern China, *viz.*, in the Lissu, Lolo and Miao-tse tribes. Whatever may be said about the Lolos, it is certain that the figures published by Delisle[2] are purely Mongolian. On the other hand the 29 Lolos, about whom Legendre gave information in 1910[3]—that is to say, 19 in a first communication and 10 in a second communication which could not be utilised by Ivanovski (who added only the first 19 to the 6 of Delisle)—show characters so different, as regards stature and the nasal index that for the time it is necessary to put them aside (although they are transcribed in our Tables I, II and III), in order not to prejudice the diagnosis of this variety. It is not impossible that we are dealing with allogenic residues who in their turn are found amongst other primitive residues of *H. Asiaticus*, whom I have placed in the variety *protomorphus*. Both of them must have been pushed forward by the later formations and must have travelled very far from their original northern fatherland.

---

[1] *Cf.* Risley (H. H.), *The People of India*, London, 1915, App. iv, p 402.

[2] Delisle (E.), *Sur les caractères physiques des populations du Tibet Sud Oriental.* "Bull. et Mem. Soc. Anthrop.," Paris 1918, p. 473.

[3] Legendre (A.), *Les Lolos*, "Bull. et. Mem. Soc. Anthrop," Paris, 1910, p. 77, and of the same author, *Far West Chinois, Aborigines* ; *Lolos Ibid.*. p. 520.

The variety *meridionalis*—which appears indeed in S. E. Bengal, on the boundary-line with Burmah, in the Chakmas of Rangamati (to the east of Chittagong), and extends into the Indo-Chinese Peninsula—is also of low stature and has a nasal index just between the last limit of mesorrhiny and the beginning of platirrhiny, and is decidedly brachycephalic: it is principally on account of this last character that they differ from the former.

In order that I may not be lightly blamed for reasoning on averages, let me say that, as in S. E. Asia we find together representatives of both these varieties, I therefore assign to the variety *protomorphus* the individuals with more elongated cranium (the forms which it assumes belong to the sphere of skeletal craniology), and to the variety *meridionalis*, those with a short cranium. If in the other characters, the two varieties are very similar, that indicates precisely that here we have simple varieties, which obviously are by no means pure. The platyrrhiny, which is more pronounced in Assam, shows that some races with equatorial physical characters (which coincide with some residue of the Mon-khmer language) has entered into the mixture. But—leaving aside the peninsula of Malacca, in which we have various protomorphic relics that do not form a part of *H. Asiaticus*—the strongest metamorphism (that is to say, change of form) has come into existence in southern Indo-China, which presents other little known races akin to the Indonesians.

I conclude by bringing together the anthropological characters of diverse varieties in the following summary, which is obtained from the data that are furnished *in extenso* in Tables I, II and III, with the exception of the Lolos of Legendre who could not be taken into account for the reasons stated above, and also of some with doubtful nasal index (the Soiots, Manchus and Torguts).

SUMMARY I.

Anthropometric Characters of the Asiatic Xanthoderms.

		Stature	Ceph. Ind. (living subjects.)	Nasal index (Living subjects.)
H. Asiaticus	(H. Sinicus)	1612-1676	79·3-80·2	72·9-79·0
,,	Neo-arcticus	1623-1625	80·8-82·0	78·7
,,	Palæo-arcticus	1545-1601	78·3-80·8	76·5-79·1
,,	,, brachimorphus	1540-1587	83·0-85·6	76·3-78·1
,,	Altaicus	1597-1626	79·5-82·7	71·2-78·9
,,	Centralis	1614-1684	84·3-87·0	71·7-80·5
,,	Tibetanus	1570-1669	76·8-81·6	67·2-78·5
,,	,, brachimorphus	1603-1622	83·3-84·3	71·7-74·1
,,	Protomorphus	1550-1635	75·9-80·8	84·0-95·0
,,	Meridionalis	1559-1649	82·7-85·5	·863

Deniker did not proceed otherwise when fixing the stature and cephalic index (with the nasal index he did not trouble himself) of the Nordic, Alpine, Dinaric, Ibero-insular and the other races of Europe, nor has a better method been yet found for the identification of such races; be that said to the honour of our lamented colleague.

Among the Xanthoderms, the lowest stature is found among the Palæo-arctic people in a wide sense, who make up the largest part of the Siberians; specially the *brachymorphus* sub-variety presents the minimum stature, but it is characterised besides by brachycephaly and some other characters that are not found in the Summary, that is to say, by platycephalism. In fact, Rudenko writes with regard to the Ostyaks of the Yenissei: " Like the Samoyeds and the Soiots they have very low crania (84·0% of the individuals are chamae-cephalic)"[1] He deduces from all the characters taken together that these three peoples are closely related, and thus he feels justified in propounding the following hypothesis, which has the merit of being in accord with the views previously propounded by Castren, by Charusin and by Goroschtschenko: "A fairly numerous people, the Soyots (or another people of the same race) quitted, in former times, the Altai Mountains, proceeded towards the north and fixed their habitation in the basin of the river Yenissei where we find the remains of this people under the name of the Ostyaks of Yenissei. Passing farther towards the north, a party of this same people occupied the polar Tundra up to the Gulf of Khatan in the east; another party moved towards the west, crossed the Ural Mountains and settled in the northern confines of Europe up to Scandinavia inclusive. In this region it is known under the name of the Samoyed, and on the peninsula of Kolsky and in Scandinavia it is known by the name of Laps."[1]

---

[1] RUDENKO (S.), *Resultats de mensurations anthropologiques sur les peuplades du nord-ouest de la Sibérie.* " Bull. et Mém. Soc. Anthrop.," Paris, 1914, p. 139.

Besides making this hypothesis Rudenko maintains that on the other hand the Ostyaks of the Ob and the Vogul belong both to another race. Deniker also believes them to be another race naming them "Ugri," short and dolichocephalic, or to be more exact mesaticephalic. These two characteristics, in our opinion, connect them with other Palæoarctics, as may be seen from our Tables I, II and III; while we, agreeing with the hypothesis referred to above, separate the Samoyeds, the Ostyaks of the Yenissei and the Soyots in a brachymorphous subvariety.

The populations which are now to be found in the high valleys of the Altai belong partly to the variety *altaicus* and partly to the variety *centralis*, as can be seen in a work recently published by Hildén.[1] This Finnish anthropologist was able, in the summer of 1914, to make a voyage to study the eastern regions of the Russian Altai and to measure 162 Lebedins, 88 Tubalars and 49 Telengets of both sexes. He believes, from his somatological examination, that the Lebedins, who are farthest north, are to be considered as Ugres from the Ob in an impure state, whilst the Tubalars are more strongly mixed with the Turco-Tatar peoples, and the Telengets, who are the most southern of all, must be included amongst the Mongolic peoples, although they also present an Ob-Ugrian element.

---

[1] *Ibid.*, p. 139. This hypothesis does not differ from that suggested by us in *L'uomo attuale*, Roma, Albrighi e Segati, 1913, p. 76.

In my opinion all these denominations only bring confusion and seem to me exactly those linguistical and political labels which are better left aside. For this purpose we wish to show how the three ethnical groups above mentioned can be simply classified according to the preceding Summary I of the "Anthropometric characteristics of the Asiatic Xanthoderms," and we therefore give the averages of the male sex after Hildén :

	Stature	Ceph. Ind.	Nasal Ind.
61 Lebedins♂	1626	80·1	78·9
37 Tubalars♂	1634	82·7	80·7
29 Telengets♂	1631	86·2	75·6

The averages of this last group are in admirable concord with the averages which I have assigned to *H. asiaticus centralis* in Summary I. For the first group there is instead a choice between the two varieties *altaicus* and *tibetanus*, in whose averages we find those of the Lebedins, but considering the geographical criterion—*i.e.*, from the fact that we know the habitat of the Lebedins—the precise indication must be to assign them to the variety *altaicus*. Lastly, the Tubalars give averages which show a mixture between *altaicus* and *centralis*, as the stature and the nasal index are somewhat higher than those general to the first and the ceph. index is somewhat lower than that we give for the second, in agreement with the geographical position of the Tubalars, which is intermediate between the Lebedins and the Telengets. We have thus given an example of our method of using these three physical characteristics in the systematic scheme.

---

[1] HILDÉN (K.), *Anthropologische Untersuchungen über die eingeborenen des Russischen Altai.* "Fennia" 42, N. 2, Helsingfors, 1920.

II

The Asiatic Leucoderms, according to our **scheme** of classification already published,[1] belong either to *Homo indoeuropæus dolichomorphus* or to *Homo indoeuropæus brachymorphus*, two varieties of *H. indoeuropæus*, or *H. occidentalis*, that are met with also in Europe.

The *Dolichomorphus Whites*, one may follow up more or less clearly from the Mediterranean up to Cashghar and to India, but with great variations in stature and appreciable variations also in the ceph. ind. according to Biasutti's map V. It is doubtful whether they are all related to the Mediterraneans, or whether there are representatives of the Nordics with fair hair and light blue eyes. Both the branches having proceeded from the anthropogenic centre of N. W. Asia, the initial difference between them must have been very slight or none at all, and it is reasonable to think that those who came last have better conserved the leucodermic characters. The last comers are the Iranians, whose arrival in their present habitat may be referred to about the middle of the 9th century B.C. : to them von Luschan assigns the Curds, seen by him, who have elongated crania, fine hair and light blue eyes.[2] On the other hand, these last two peculiarities were not observed in the Curds by Chantre.[3]

The *Brachymorphus Whites* are found in various areas of anterior Asia intermixed with the Dolichomorphus, producing numerous peoples who are unclassified, not for ignorance of their anthropological constitution, but because of the impossibility of assigning to them any single collocation. Thus there are certain Kurdish tribes who do not show the dolichomorphic type, but the brachymorphic : such are specially the Curds of Transcaucasia in Russian Armenia.[1] The contrast repeats itself also among the Yesidi of Mesopotamia, who according to Goroschtschewski[2] are mesaticephalous, while von Luschan has seen other settlements of those resembling the Kyzilbash of the northern Mesopotamia, who are hyper-brachycephalous. The fact stands that the Curds measured by Pittard are quite different from those of von Luschan, being strongly brachycephalic and never having fine hair and light blue eyes ; Pittard also writes about them : " For us the true Kurds and the true Armenians appear to be of the same ethnic group,"[3] that is to say, the group of the brachycephals of high stature. Evidently these are not the true Curds for von Luschan, and it is difficult to say why they must be " the true " ones : we are rather inclined to hold that the true ones, that is, the original people who came down from the north are the dolichocephals, who are also less pigmented.

---

[1] GIUFFRIDA-RUGGERI (V.), *Schema di classificazione degli* Hominidae *attuali* "Arch. per l'Antrop. e l'Etnol," XLII, 1912, fasc. 1, p. 141, and also *L'Uomo attuale*, op. cit., p. 156.

[2] VON LUSCHAN (F.), *The Early Inhabitants of Western Asia.* "Journ. R. Anthrop. Inst.," XLI, 1911, p. 299. He adds that they speak an Aryan Language allied to Modern Persian.

[3] CHANTRE (E.), op. cit., pp. 104-105, 242.—See also by the same author: *Recherches anthropologiques sur le Caucase.* T. IV, *Populations actuelles.* Paris—Lyon, 1887, p. 263.

To the Armenians and brachycephalic Curds Pittard adds the Lasi, of the South-eastern littoral of the Black Sea, who according to his opinion must be put outside the Kartvelian and Georgian group.[1] This decision appears to us perfectly logical : the affinity between the Armenians, the brachicephalic Curds, the Lasi, the Aissori,—perhaps also the Bektasci of Licia and the Kyzilbasch of Mesopotamia—is much greater than that between them and the Georgians ; the first are all brachicephalous and in stature lower than the average, so that it appears reasonable that they should be collocated in a sub-variety as will be seen in our Table IV.

---

[1] This may be due to their intercrossing with the Armenians and also to cranial deformation : Chantre had occasion to measure 12 Curds in the environs of Erivan, and he says that 8 of them having a cranial deformation gave 84·62 as ceph. index, while four non-deformed gave only 81·6 (*Recherches anthropologiques sur le Caucase*. T. IV. cit, p. 262).

[2] *Cf.* IVANOVSKY (A.A.). *Die Jesiden*, "Arch. f. Anthrop. N.F." IV, 1902, p. 509 (recension).

[3] PITTARD (E.), *Anthropologie de la Roumanie. Contribution à l'étude anthropologique des populations sporadiques de la Dobrodja : Les Arméniens.* "Bull. Soc. Roum. des Sciences," XXI, n. 5, p. 366, Bucharest, 1912.

With the first, one may consider related, some of the populations of Syria : the Metuals of Lebanon, the Ansari of Antioch ;—Chantre[2] shows both of them as related to the Curds, and this may be accepted perhaps as referring to the brachycephalic Curds. According to von Luschan here are to be added also the Druses, the Maronits, and also those Semites who present the Armenoid type, about whom, notably among the Kyzilbasch, he disclaims absolutely any artificial influence.[3] · The flat occipital form, in which the occiput comes straight down is accompanied by a rather high cranium. Pittard, although he denies that deformation has influence on the ceph. ind., since the deformation is not identical in all cases, nevertheless admits that it is there, and affirms that it consists principally "of a fronto-occipital compression making the parietal and the superior occipital region project more or less."[4] Chantre also is very explicit about the influence, as he admits, of infantile deformation, with regard to the Aissori,[5] the Lasi,[6] and the Aderbaijani, etc.,[7] as follows also from the description of the cradle in use in Asia Minor where he says: "The infant being attached solidly, is laid upon its back and the nape of its neck does not take long to be flattened."[1] The deformed Curds we have referred to elsewhere.

---

[1] PITTARD (E.), *Anthropologie De la Roumanie*, etc. : *Les Lazes* "Bull Soc Roum. des Sciences" XIX, n. 5. pp. 918, 936, Bucharest, 1910.

[2] CHANTRE (E.), *Recherches anthropologiques dans l'Asie occidentale*, loc. cit., p. 169.

[3] VON LUSCHAN (F.), loc. cit., p. 233.

[4] PITTARD (E.), *Anthropologie de la Roumanie*, etc., *Les Lazes*. loc cit., p. 916.

[5] CHANTRE (E.), *Recherches anthropologiques dans l'Asie occidentale*, loc. cit., p. 224.

[6] CHANTRE (E.), *Recherches anthropologiques sur le Caucase*, T. IV., cit., p. 91.

[7] *Ibid.*, p. 248

However this may be, it is certain that among the Galchas and the Tajiks there prevails a different cranial form, that is platy-cephaly, and therefore we can infer the existence of a local sub-variety, *pamiriensis*. There are always, as characters of the *armeno-pamiriensis* variety, strong brachycephalism and a stature higher than the average. On the other hand the variety *georgianus*—shows slight brachicephalism and about medium stature, perhaps also a more pronounced leptorrhiny.

The Brachymorphus White can be followed East as far as the basin of the Tarim: in fact among the people of Cashghar there prevails a brachycephalic element which is not Mongolian, as we find from the notes that have been so diligently registered by the Englishman, Stein, in two journeys of exploration (1900-1901 and 1906-1908), in which he measured about 600 individuals. Joyce,[2] who has published a considerable portion of the data collected by Stein, gives specially the **Wakhi**[1] as a pure element—but more or less present in the majority of these peoples—closely related to the Galchas; therefore the Wakhi are collocated in Table IV beside the Galchas and the Tajiks: their stature is intermediate between the two. For the ceph. ind. (Table V) we must take note of the fact that Joyce affirms the existence of artificial deformation. Naturally many of these tribes are of mixed Leucodermic and Xanthodermic elements, and therefore we have omitted them, mentioning only a few among the "unclassified," a few of the *H. Asiaticus* and a few of *H. Indoeuropœus*. The subvariety *pamiriensis* is really related to the so-called *H. Alpinus*, to the Savoyards, etc., which fact has been misunderstood because of the idea that all of them were Mongoloids.[2] This is so far from the truth, that it is enough to say that they want all those characters that we have previously described as belonging to *H. Asiaticus*.

---

[1] *Ibid.*, pp. 41-42. This custom seems to have originated in Central Asia as will appear from a comparison of the practice of the Kirghizi, according to a description by UJFALVY (*Les Aryens au nord et au sud de l'Hindou-kouch*, Paris, 1896, p. 397) "The Kirghiz women place their babies at the breast on a small board and attach them to it in such a way that the back of their head gets flattened by pressure." It is important to note that the Chinese traveller Hiouen-Thsang who visited Central Asia in 648, found the same custom prevalent towards the frontier of India and mentions it in two places: *cf.* UJFALVY (Ch. de), *Memoire sur les Huns blancs.* "L' Anthrop," 1898, n. 3-4, pp. 271, 276. A characteristic retreating forehead seems to me observable in the Hittites said to be prisoners of Rameses III, and I consider them to have deformed crania, thus constituting the most ancient documents of cranial deformation: see the fig. in MÜLLER (Max W.), *Asien und Europe*, pp. 323, 331.

[2] JOYCE (T. A.), *Notes on the Physical Anthropology of Chinese Turkestan and the Pamirs.* "Journ. R. Anthrop. Inst. XLII, 1912, pp. 467-468; see also by the same

---

author: *On the Physical Anthropology of the Oases of Khotan and Keriya. Ibid.* XXXIII, 1903, p. 312. The last one contains the data utilised by Ivanovsky; those of 1912 appear in part in my tables.

[1] We must show respect to the anthropological insight of Ujfalvy who made the same diagnosis about the inhabitants of Wakhan 40 years ago. In Vol. II, p. 156, of the *Expèdition scientifique Française en Russie en Siberie et dans le Turkistan*, he writes that the Sarikols of the Eastern slope of the Pamir represent the pure remnants of the same white type that "has exercised a decisive influence on the formation of the Kashgharians and the Tarantchi of the present day." While the Kashgharians do not now-a-days show any blonde element (op. cit., Vol. III, p. 49) yet we have the blondes among the natives of Siricol; this is to be placed in connection with the description given in the Chinese Annals of the inhabitants of Lake Lob, the Usun, who had blonde hair and blue eyes (op. cit., Vol. I, p. 159). It is very probable that at that time also only a minority of the white had such prominent characters as the depigmentation, which attracted so strongly the attention of all the brown peoples: *cf.* DE UJFALVY (Ch.), *Les Aryens*, etc., op. cit., p. 26, note 1.

[2] This preconceived idea is the thesis so strongly upheld by SERGI (G.), *Gli Arii in Europe e in Asia*, Turin, 1903. pp. 128, 133, against the theory of Ujfalvy who did not at all think that the Savoyards are Mongoloids. Notwithstanding the insistence of Sergi it is a theory completely rejected: *cf.* MENDES CORRÊA (A. A.), *Estudos de Etnogenia Portoguêsa (crânios braquicéphalos)*. "Anais Scient. Fac. Med." Oporto, IV, 1918, n. 2, p. 67 of the extract; *cf.*, also HADDON (A. C.), *The Wanderings of Peoples*, Cambridge, 1911, p. 17.

We are thus arrived near to that region called Zungaria, which makes us think of the question of the origin of the Leucoderms, since we have already said that probably it bordered as much upon the anthropogenetic centre of the Leucoderms, as upon that of the Xanthoderms, according to our hypothesis of the plurality of the centres of differentiation in species and sub-species, *i.e.*, specific late centres. The first centre we have located in the N. W. of Asia, and we are inclined to believe that it originally was constituted of dolicho-mesaticephals, like the original yellow stock (it may then hardly be maintained that this skeletal character can ever have a great discriminative value!): this is in agreement with the skulls excavated in Turkestan mentioned above, and also with the fact that the earliest population of Siberia was made up of dolichocephals with European faces[1] as can be seen from the prehistoric crania found in the sepulchres of the upper valley of the Yenissei. We hold instead that the brachycephals with European faces are a variety of the more ancient branch, the above mentioned dolicho-mesaticephalic people, who settled by preference in a mountainous habitat.

Having stated this it is not without some interest to refer to what Ujfalvy says of the inhabitants of Zungaria: "It appears to me proved that the Dungani are a special people, of non-Chinese origin, and that in their composition have entered, without doubt, some elements that are neither Mongolian nor Altaic."[2] Although the Dungani have all of them hairless skin and a scanty beard, 'an unknown element must have ruled the formation of their type': the explanation given by Ujfalvy is that these

---

[1] DENIKER (J.), op. cit., p. 424.

[2] DE UJFALVY (Ch.), *Les Kachgariens, Tarantches et Dounganes.* "Rev. d'Anthrop." II serie, T. II, 1879, p. 495.

'aborigines of Central Asia,' "are the descendants of the Sakas, the Yuechis, the Hiungnus and of the Uigurs, grafted upon the elements of a white autochthonous race."[1] A white autochthonous race of Central Asia implies the existence geographically near that region of an ancient leucodermic centre, as I have established on other grounds, and this coincidence can certainly not displease me, in as much as I am far from believing in the theories of those who specify Africa as the original seat of the white people.

Ujfalvy does not say whether this primitive race, before the yellow people were grafted on to them, was dolichocephalic or brachycephalic, but probably he was of our opinion favorable to the original dolichocephalic one, since a small series of 8 Dungani measured by him gave him the following ceph. ind. 74·85, 78·83; 79·0, 79·0, 79·89, 82·9, 84·49, 85·68, while in 8 Manchus he had all the ceph. indices above 80. In making this comparison he evidently wishes to suggest to the reader the improbability that the autochthonous people also had been brachycephalic, since in such a case we would not have among the present Dungani a majority of dolicho-mesaticephals.

In conclusion, this part of Asia, which ordinarily is given as the common seat of racial crosses, has perhaps an anthropological importance which is unsuspected by the vulgarisators of a certain simple system, and was acutely perceived by Ujfalvy alone. We persist in believing that the Leucoderms have migrated from the N. W. Asia, the last of whom the linguists divide into Eastern Aryans and Western Aryans. These last having gone farther from the original centre must have been the first to depart, and their exodus ended about the year 1800

---

[1] *Ibid*, p. 489.

B.C., at which epoch the Hittites, arrived in Asia Minor,[1] and probably had something to do with the complicated ethnical constitution of the modern Curds and Yesidi, "the last unconscious followers of the cult of Zoroaster."[2] Close affinities of a cultural nature have been found between the Hittites and the most ancient civilizations of Turkestan.[3] The language of the Hittites, which at last scholars have succeeded in reading, has turned out to be Aryan and is related to Tokhari of Turkestan: a most important fact is that it probably forms the bridge[4] between the Western European idioms and Tokhari.[5] The period of the migration of the Western Aryans being ended, there followed that of the Eastern Aryans, which, for Asia Minor, commences perhaps with the Mitanni (circa 1600 B. C.) and ends with the Iranians (850 B. C.); this then explains how the Curds linguistically are Iranians, without prejudice to an anthropological inheritance still more ancient, but not essentially diverse, since anthropology places the origin in the case of the Hittites, as well as of the Iranians, at a northern Asiatic centre, as we shall show later.

The special position of the Tokhari, we believe, cannot be explained unless one admits a series of successive waves, every one of which we suppose departed on its own account from Central Asia, according to the following scheme of arrangement which commences with those most ancient and hypothetical and ends with those which are the most recent and proto-historic :

---

[1] This is the date usually given, but on the cuneiform tablets the Hittites are already mentioned in the XXIII century B.C., *cf.* CONTENAU (G.), *Les Hittites, l'Orient et la Grèce*, "Rev. d'Assyriologie," XVI, 1919, pp. 97-106; and also AUTRAN (C.), "*Pheniciens.*" *Essai de contribution à l'histoire antique de la Mediterranée.* Paris, 1920, p. 95.

[2] CHANTRE (E.), *Recherches anthropologiques dans l' Asie Occidentale*, loc. cit., p. 93.

[3] GARSTANG (J.), *The Land of the Hittites*, London, 1910, p. 320.

[4] CUMONT (Fr.), *La Langue des Hittites.* "Compt.—rend. de l' Accad. des Inscript. et Bell.-Lett." March—April, 1907

[5] Tokhari is said to be akin to the Western languages particularly to Italo-celtic, according to S. Levi ("Journ. R. Asiatic Society," 1914, p 959).

(*a*) Primordial Leucoderms (Cro-Magnon ?),
(*b*) Proto-Aryan Leucoderms (proceeded to the plains of Eastern Europe)
(*c*) Western Aryan Leucoderms (Italo-Celtics),
(*d*) Aryan Leucoderms of the Desert of Takla-Makan (Language Tokhari)
(*e*) Aryan Leucoderms of Asia Minor (Hittites ? then Mitanni)
(*f*) Aryan Leucoderms of Iran and India.

One can no longer admit the old theory of the push *from behind*, of one legion following another, since in that case it would be incomprehensible how the Tokhari-speaking peoples of the basin of the Tarim could be found among the Italo-Celtics and the Hittites. Adopting instead the image of a centre of pulsation, which sent ethnic waves now in one direction now in another, the contiguity in space is no longer indispensable for explaining the contiguity of language. Anthropology has nothing that goes against, rather it comes to the support of the linguistic evidence, in view of the fact that the presence of the European face has been established among the present brachycephals of the Pamir and in the natives still remaining in the desert of Takla-Makan. Moreover, it is an established fact that here and there in Central Asia, one finds blondes, for which we have the authoritative testimony of Ujfalvy. "All the Iranians have chestnut hair, but one meets with blondes among them, more among the Tajiks of the plain than among the Galchas. While in the last-mentioned tribe the blondes are 8 per cent. of the population, among the Tajiks of Fergannah we meet with 12 to 13 per cent. and in those of Samarkand up to 27 per cent."[1] These are the same proportions as are met with here and there in Europe, and this is natural, since Leucodermic Asia offers the same anthropological composition as Europe.

Looking at these things without prejudice one may add, that Leucodermic Asia is predominantly—and perhaps it was more so in ancient times than now—Aryan like Europe. As regards the question whether the blondes have had something to do with the Aryan language, we believe that it was so only as Nordic representatives. Evidently it is necessary to discard the thesis that depigmentation is connected with altitude, in view of the fact that Ujfalvy has been able to establish it as a fact that in the Iranians the blondism of hair diminishes with the altitude, as will be seen from the figures cited above, as also from what he writes :—" There is the same progressive variation on account of the altitude in the case of the beard. The Tajiks of Samarkand have 38% of blonde beard, those of Fergannah 36%, the Galchas taken all together 15% and the 43 Galchas of the high valleys of Zerafshan and of its affluents only 13%." Besides, it seems that the blonde Galchas have been specially sought for by Ujfalvy [2]; consequently the percentage must be still lower, and it seems it diminishes going towards the south : in Chitral blondism has few representatives (a few blondes were seen by Bonvalot), and in India it may be said that it is almost entirely absent.

---

[1] De Ujfalvy (Ch.), *Résultats antropologiques d'un voyage en Asie centrale*, Paris, 1880, and in other places.

[2] De Ujfalvy (Ch.), *Les Aryens*, etc., op. cit. p. 485.

The fact that the Aryan language has come to the country does not take from the view that the Indian Peninsula makes up an extreme area of the leucodermic penetration, an area that is comparable with that of anterior Asia, which we have considered when speaking of the Curds and of their probable ancestors (in part), the Hittites. The dependence of both the areas on a common centre has become evident, after the great discovery of the treaty of peace of Boghaz-Keui, between the Mitanni king called Mattiuaza and the Hittite king Subbiluliuma, where among the gods invoked by the first appear the well known Vedic names of Varuṇa, Indra, etc. This confirms that the Aryan religion had been elaborated in the far north ; from the north it had been carried into the south of Asia, not by missionaries but by such migratory waves as we have arranged in the form of a systematic scheme.

Chanda draws two conclusions from it. The first is a highly justifiable conclusion : " There are strong evidences to show that in the sixteenth and the fifteenth centuries B.C., in Syria and upper Mesopotamia, there were several colonies of men of Aryan speech, some of whom at least worshipped Vedic gods. "[1] Less justified is the other conclusion that the Aryans have passed through Syria and Mesopotamia, absorbing " a good deal of Semitic blood," before they reached India.[2] We believe instead that the Aryans reached Iran directly from the north[3] and afterwards pursued two diverging paths, one towards the west, and the other towards the east. The branch which went towards the west, more probably than the other, must have absorbed Proto-semitic populations.[1]

---

[1] CHANDA (Ramaprasad), *The Indo-Ayran Races*, Part I, Rajshahi, 1916, p. 29

[2] *Ibid*, p 33.

[3] From *Airyana-Vaego*, a subarctic region to the north of Sogdiana, with ten months of winter (which explains the origin of the cult of fire), and two of summer, but always in a better condition of habitability than at present : *Cf.* MAUNDER (A. S. D.), *Iranian Migration before History*, " Scientia," Vol, XIX, 1916, n. XLVI-2.

To the branch pushing towards the west we assign the Mitanni, probably related to the Hittites, according to Charles, who holds the Mitanni to be a Hittite people,[2] but the Hittites must have chronologically preceded them. The opinion of Söderblum, seems to us absolutely fantastic: he believes that the Hittites came from the coast of the Baltic, which coincides with Moulton's opinion[3] that the Aryans came to India across Russia. The crossing of the Caucasus by the Hindus towards 1700 B. C. is accepted also by Hüsing in accordance with the theory of the European origin of the Aryans, which does not appear to us now any more convincing.[4] We prefer the hypothesis of the bifurcation in Iran.

At the centre remained the ancestors (pro parte !) of the present Tajiks, of whom Khanikoff speaks as "the aborigines of the Persian race, who have been able to preserve their language and some traces of an ancient civilisation."[5] We have already seen that the Tajiks present the highest percentage of blondes in the whole of Asia. We add that the Nordic representatives in western Turkestan also appear far from the area of their origin: this distance serves to explain a fact noted by Ujfalvy, namely, that

---

[1] The Jews were vassals or mercenaries in the service of the Hittites, according to Clay (*The Empire of Amorites*, New Haven, 1919), who believes that the Arab nations came originally from the North like the other Whites. The most ancient of these nations was already on the Middle Euphrates in the IV millennium B. C.

[2] *Encyclopædia of Religion and Ethics*, VI. 723*a*.

[3] Moulton (J. H.), *Early Zoroastrianism*, p. 5.

[4] The Asiatic origin of the Aryans has returned manifestly in favour, since it has been held by E. Meyer (Zeitschr. f. vgl. Sprachwiss. XIII, p. 16) that the Aryans remained in the region east of the Aral and Caspian until about 2000 B. C., and after that time began to make their way eastwards into India and south-westwards.

[5] Khanikoff, *Mémoire sur l'Ethnographie de la Perse*, Paris, 1866, pp. 90, 92.

332 /9.2)./.

"the blonde types among the Iranians are as brachycephalic as the chestnut-coloured and brown types."[1] This same fact is seen equally in Central Europe.

The branch that went towards the East and proceeded into India, being obliged to pass across the regions already inhabited by tribes related to the Mediterraneans and perhaps also, as we believe, by tribes akin to the Dravidians, appears anthropologically to have been very brown dolichocephals. But from what I have expounded it is evident, that it is useless and vain to ask, who were the Aryans, the Dolichocephals or the Brachycephals? The Aryan languages spread from a very northern centre, and that without any special regard for the brachycephals or the dolichocephals : this is our opinion, as can be inferred from what I have expounded above. It is clearly contrary to the theory of Sergi,[2] who calls the brachycephals round about Pamir "Mongoloids speaking Aryan," and assigns to them the task of Aryanising Europe. If they were of Mongolian origin there would not be any reason why in the centre of Asia, in the basin of the Tarim, they should be of European features. The only logical conclusion is that they are not Mongoloids. We also repeat what already Ujfalvy had to conclude from his own observation : "We see once again that we have here a white race which is highly brachycephalic."[3]

Leaving aside this preliminary so-called Aryan question—which it seems must remain an eternal riddle to be solved by extravagant inventions for personal amusement —we bring together, as we have done for the Xanthoderms, the anthropometric characters of the Asiatic Leucoderms. These are collected from Tables IV, V, VI : only I have excluded the stature of 14 Hebrews of Palestine which is too low, probably because of the smallness of the series. We have the following synopsis:

---

[1] De Ujfalvy (Ch.), *Expedition scientifique*, etc., Vol. III, p. 12.

[2] Sergi (G.), *Gli Arii*, etc., op. cit., p. 259. *Cf.* also pp. 132-133, 153-154, 256.

[3] De Ujfalvy (Ch.), *Expedition Scientifique*, etc., op. cit., Vol II, p. 151.

SUMMARY II.

Anthropometric Characters of the Asiatic Leucoderms.

			Stature	Ceph. Ind.	Nas. Ind.
H. Indo Europæus.	Dolicho-morphus.	European Variety[1]			
		Asiatic Variety :			
		Indo-Afghanus	1610.1684	71·3.77·5	64·4-74·1
		Indo-Iranus	1642.1683	80·0.82·8	67·8-74·3
		Irano-Mediterraneus	1633.1745	76·2.79·8	59·6-73·3
	Brachi-morphus.	European Variety[1]			
		Asiatic Variety :			
		Armeno-Pamiriensis	1660.1707	84·1.89·5	62·6-72·0
		Georgianus	1646.1658	82·5.84·2	57·6-645

First of all we have to explain the rise in the ceph. ind. which is found in the *Indo-Iranian* variety, a rise that seems a little in contradiction to the systematic position of this variety. Analogous to what we see in Tuscany, where besides the brachycephals and the dolichocephals there exists a most remarkable proportion of a middle type —perhaps a product of convergence from intermixtures for thousands of years of the other two—similarly also in Iran and in Beluchistan (*cf.* Table VI) we have a type which by a little extension we may continue to assign to *H. Indo-europæus dolichomorphus*, but which in reality is on the border line between mesaticephals and brachycephals, sometimes more inclined towards the latter than the former. To save ourselves from the blame of reasoning upon averages, we say that many Pamirian brachycephals ought to be recognised individually, exactly as in the case of many dolichocephals of the Indo-Afghan type; but it is not possible for us to make this discrimination in the averages, and as we hold it probable that in reality there is a large proportion of the intermediate type, thus — until proved to the contrary — we can indicate this fact as another result of convergence by intercrossing, comparable to what we have in Tuscany, where the percentage of the dolichocephals and the brachycephals, Alpine type or other, is much reduced thereby. According to our idea, the Indo-Iranian variety should have also the ellipsoid, ovoid and pentagonoid forms as we have in *H. Indo-europæus dolichomorphus*, but broadened, thus reaching eventually also the initial point of brachycephalism. This broadening of the elongated forms I have always observed in the areas of intense miscegenation between the dolicho-mesaticephals and brachycephals, and I have no difficulty, theoretical or preventive, against such possibility in Persia and in Beluchistan: perhaps it is only an elimination of the extreme forms, which become more rare.

---

[1] Not considered here. *H. Induœuropæus* has no linguistic significance but rather that of *H. albus* or *H. occidentalis*.

I do not deny in any way that the Mongolian brachycephals came to this part of Asia and that they are still represented there (if there are also so many in European Russia!), but these are easily recognisable by other characters, that is to say, by the characters of *H. asiaticus*. As a matter of fact, the Hazaras of Afghanistan, of whom 200 gave as stature 1684 mm., ceph. ind. 85·0, nas. ind. 80·5, have not only the character of brachycephalism (which in itself is so little Mongolian!), but also that of mesorrhiny, and the lowest orbito-nasal index (111·2) among all the population of the so-called (erroneously) Turko-Iranian type[1]; they have frequently oblique eyes or eyes with the characteristic Mongolian fold, the absence of hairiness and all the other signs of the Mongolian stock.[1] The anthropometric characters show their relationship with the Carakirghizi and also with some of the tribes of Cashghar, that is to say, with the Loplik in stature and with the Cheria in the ceph. ind. and nas. index, but specially with the Turfan Taranchi who have been measured by Stein (Joyce), and whom I have assigned to *H. asiaticus centralis*. So I did the same in the case of the Hazaras, as soon as the nasal index warned me that I was not dealing with Leucoderms, but with an extreme offspring of the Mongolian race, and in examining the descriptive characteristics I found my opinion confirmed. But how can we assign the Chhuttas and the Bandijas of Beluchistan to the Mongoloids only because they present a strong degree of brachycephalism, while they have a nas. index of 58·6 and 59·9 respectively and an orbitonasal index of 124·3 and 122·6 respectively? Allowing that the colour of the skin is of no account, do we wish also to leave aside the facial characteristics, which involve also the morphology of the skeleton of the face? Certainly one may reject everything that is disturbing, but one must not pretend that the result, thus "selected," is an objective classification and much less that it is naturalistic: and to be proud of it seems to me absolutely ingenuous as nothing indeed is easier.

---

[1] *Cf.* Risley (H. H.), *op. cit.*, p. 395.

We do not wish to pass over in silence the fact that it has been said to satiety by Sergi that in this part of the globe we have to do with a mixed variety or species, but to accept such a diagnosis would be equivalent to accepting the Sergian classification, which considers all the brachycephals as Mongolians or Mongoloids[1], whatever other characters they may possess in all the rest of their body and in whatever parts of Europe or of Asia they may be found[2]. In the same way that De Lapouge said that with a little of the yellow tint France would be a country of true Mongolians[3], so the Sergian craniological simplicity would conduct us to the same result that is manifestly the most one-sided conclusion and only founded upon a simple premise. Quite different are the results which one arrives at whenever one does not accept with closed eyes the very simple criterion that brachycephalism always marks out a Mongoloid, which is equivalent to saying—and it does not matter that this is not declared in an explicit fashion, seeing in fact that there is no other systematic criterion—that this sole character is sufficient to settle the question of races. We—and with us almost all anthropologists—prefer the definition of Pittard, one of the few who have travelled to study the human races *in situ* and have found themselves faced by the reality, which is so very different from mere verbal creations. "A human race is not characterised with the aid of a single morphological definition. It is the association of several characters, found among all the individuals of the same group, that determines the *race*."[4] Practically, all the results of Summary II, which are obtained from the measurements taken upon many thousands of individuals (the number of the persons examined can be seen in the Tables), compared to those obtained on a number still more imposing of Xanthoderms (Summary I), show that the principal difference resides in the diversity of the nasal index. The difference may be seen from the fact that in the nasal index of the Leucoderms the average does never go up to 75, whereas in the Xanthoderms it almost never goes down below 70, which is evidently due to the greater nasal width of the yellow race. This difference is so precise that Pittard gives it among the diagnostic signs for distinguishing the Mongoloids from those that are not so in anterior Asia[1]; it serves us moreover to make the anthropological comparison between the yellow and the white. An important difference may be seen also in the stature, which in the Leucoderms of Asia, always of course in the average, never goes down below 1610 mm., while in the Xanthoderms it goes down so far as 1540; in the upper limit, however, there is no difference, so that one may say that this character has a greater range among the yellow people than among the white. The difference in the ceph. ind. is less marked, because we have in the yellow as well as in the white as many of the dolicho-morphic variety as of the (later) brachy-morphic variety; the first, however, are rather mesaticephalic in the Xanthoderms, so that the ceph. ind. does not go down, on an average, below 75·9, while in the Leucoderms the minimum in the

---

[1] See the physical description in SAINT MARTIN (V. de), *Nouveau Dictionaire de Geographie*, Vol. II, Paris, 1884. p. 655. It shows that the Hazarus are pastoral Mongols established in the western parts of Afghanistan for many centuries, as they are mentioned as living there in the year 1265 by Abul Fazl, who notes that 77 years before Khorassan had been abandoned by its inhabitants, hence the ethnic change may be thrown back to 1188.

---

[1] Sergi (G.), *Europa*, op. cit., p. 551. "Although of hybrid origin these Euro-Asians are Mongoloids."—This is the conclusion to which above all he sticks. A few pages afterwards the same author adds: "A species derived from *Homo Asiaticus* in its skeletal characters."

[2] He excludes America, which is incomprehensible, if this skeletal character should have such a preponderating discriminative value: but in reality it is not a skeletal character that has any specific (or eventually, 'generic') value when not accompanied by other concomitant characters, and this is the reason why the Sergian system rests condemned. *Cf.* with regard to the absence of such concomitant characters. Giuffrida-Ruggeri. (V.). *I caratteri craniologici degl'Indonesiani.* "Arch. per. l'Anthrop. e l'Etnol.," XLVI, pp. 148-150.

[3] De Lapouge (V.), *Race et milieu social.* Paris, 1909, p. 70.

[4] Pittard (E.), *Les caractères anthropologiques principaux des populations balkaniques.* "Le Globe," T. 56, Mémoires. Geneve. 1917, p. 88. Pittard notes, for

---

example, that the Curds, the Lasi and the Armenians have no relationship with the Tatars, although they are equally brachycephalic: this absence of affinity follows from the other anthropological characters, which are held therefore in greater account than the ceph. ind. itself, when one proceeds to the classification of larger human groups.

[1] *Ibid.*, p. 74

series, that is to say. the lowest average, is 71·3. The aboriginal skull did not show any morphological differences between those who should become white and those who should acquire the yellowish tint.

Let us here briefly note that craniological studies when made without preconception lead to the same results. Thus Reicher came to the conclusion that the cerebral skull shows a great similarity between Alpine brachycephals and Mongolian brachycephals, whilst their facial skull shows great differences.[1] He adds that from his inquiries he does not find that the facial skeleton is to be held more variable than the cerebral skeleton ; thus one may believe that the acquisition of brachycephalism took place in the two races (whether they are varieties or species) in an independent way from either similar or diverse influences, which had the same result. In fact it would be more difficult to explain why, having aboriginally the same brachycephalic shape of cerebral skull—which is after all only an envelope!—there have taken place so many skeletal (facial), tegumentary and other differences. But we must here limit ourselves to the anthropometric characters, to which we must return.

If we take into consideration the unclassified ethnic groups, which are added to the various tables, we find it confirmed from Tables I and IV that stature has as its lower limit a figure which is much less (1583) in the Xanthoderms than in the Leucoderms (1624) and that it reaches the same higher limit (1700) in both. From Tables II and V we find that the unclassified Xanthoderms are arranged by the ceph. ind. half among the mesaticephals and half among the brachycephals, and almost the same thing is met with among the Leucoderms. Lastly, in tables III and VI—leaving aside the Dungani, as it is difficult for me to believe that they really have a nasal index of 56·12—almost all the unclassified Xanthoderm groups have the nasal index above 70, and it goes up to 94·3, while among the unclassified Leucoderms only a half have the nas. ind. higher than 70, reaching up hardly to a maximum of 76. The way in which I have arranged the averages collected from the literature, facilitates comparison between the two species that people almost the whole of the Asiatic continent, and show us also the differential characters, as for example those of the *Georgian* variety, which is prominent among the leucodermic varieties, being the lowest in stature and the most leptorrhine.[1]

---

[1] REICHER (M.), *Untersuchungen über die Schädelform der alpenländischen und mongolischer Brachycephalen. II. Vergleich der alpenländischer brachycephalen Schädel mit den mongoloiden.* "Zeitschr. f. Morph. u. Anthrop.," Bd. XVI, p. 64.

The isolation of this variety is a new result in the anthropological camp, but I hope that it will be welcome, thanks to the determination made by me. It must be added that it finds a parallel in the linguistic science, which distinguishes a group of Caucasic languages detaching them from the Aryan (Indo-Germanic) stock and among such Caucasic dialects is found precisely the Georgian.[2] Evidently it is not intended to say that the anthropologic area (we do not know yet how wide it is) and the linguistic one are coincident. Less still are we able to discover how far these two areas extended in prehistoric times, if in fact the Hittite language should be Caucasic, as Hüsing believes,[3] and if even the Chaldæns are to be counted among the Caucasic linguistically.

---

[1] The results of the study that was being made on the prisoners of war from the Caucasus by Prof. Pöch at the initiative—fortunately seconded by the authority—of the Academy of Science and of the Anthropological Society of Vienna, are not yet published in detail

[2] FINCK (F. N.), *Die Sprachstämme des Erdkreises*, Leipzig, 1909, p. 36.

[3] HÜSING (G.), *Völkerschichten in Iran.* "Mitteil. Anthrop. Gesellsch." Wien, 46, 1916, p. 224. According to Hrozny the Hittite language of the inscription of Boghaz Keui must be Indo-European, on the other hand, Prof. A. H. Sayce writes me (Nov. 30. 1919) that it is not, but contains only a large, borrowed,

What one can concede is that the "Caucasic" stratum is anterior to the Aryan, since practically its distribution in space is so reduced as to make it possible to consider it as nothing but residual. Chronologically we have no difficulty in pushing it up to 2700 B.C. as Hüsing would have it.[1]

Indo-European element, which is Sanskritic, which confirms that a "Vedic" tribe was in Asia Minor at that time. By Dr. Cowley is also maintained that "the language of the scribes" of the Hittite Empire was a "mixed language": *cf.* COWLEY (A.E.), *The Hittites*, Oxford, 1920.

[1] *Ibid.*, p. 243.

III

In Leucodermic India the anthropological composition is not the same everywhere. The strongest dolichocephalism is found in the true Aryan region, properly called *Aryandom* (which seems to be the Vedic group: the Punjab, Rajputana and the United Provinces), called also the Midland, as distinguished from the other regions called "Outer Countries." In all the castes of the provinces that now represent the above-mentioned *Aryandom*, and also among the Maithil Brahmans of Bihar, the dolichocephals prevail, there being only 25% of the mesaticephals and 1·5% of the brachycephals among living subjects, which again is reduced to zero in the skeleton. *Vice versá*, in the most typical castes of the outer zone, with the exception of Bihar, we have a prevalence of mesati-brachycephalism. Hence Chanda arrives at the conclusion that "not only social institutions, and language, but an important physical feature also, the shape of the skull, show that the *Indo-Aryans of the outer countries originally came from an ethnic stock that was different from the stock from which the Vedic Aryans originated.*"[1]

The difference in the cephalic index between the Biharis above mentioned and the Bengalis, will be seen from the following Summary which brings together the measurements taken by Chanda himself in 1909 and 1910 and now published.

---

[1] CHANDA, R. *The Indo-Aryan Races*, Part I, Rajshahi, 1916, p. 59.

SUMMARY III.

Tribe or Caste.	Locality.	Percentage of cephalic Index.						
		Individuals.	X—69·9	70—72·4.	72·5—74·9.	75—77·4.	77—5·79·9.	80—0·X.
Bhumihar Brahmanas ...	Bihar	25	4	16	28	32	8	12
Maithils	„	50	18	26	26	14	12	4
Rajputs or Chhatris ...	„	44	6·8	25	22·7	20·4	11·3	13·6
Kanaujiya Brahmanas ...	„	25	4	32	28	20	0	16
„ „ ...	United Provinces and Oudh	63	5	25	33	23	8	6
Brahmanas	Bengal	31	0	6·5	13	19·5	16	45·5
Pāśeatya Vaidik Brahmanas	„	50	2	0	4	22	26	46
Kayasthas	„	30	0	6·6	20	17	20	36·6
Tilis or Taulikas ...	„	25	0	4	4	8	40	24
Vaidyas	„	14	0	0	35·7	21·8	14·3	28·6
Rāḍhīya Brahmanas ...	„	35	0	2·9	17·2	28·6	14·3	37
Varendra Brahmanas ...	„	76	0	4	12	26	21	37

Likewise from the measurements published by Risley[1] will be seen the very great difference that exists between the Brahmans of Eastern Bengal who show 35% of brachycephals (in living subjects) and the Brahmans of the United Provinces, who have only 2%, or the Rajputs of Rajputana who have hardly 1·1% : we are here confronted by the problem of the brachycephals of India. Risley has quite rightly been preoccupied with this different bearing and he has explained it by assuming[2] a Mongolo-Dravidian origin for the Bengalis and Oriyas. But here too it is only a confusion that leads one to talk absolutely of the brachycephals, while we have to distinguish between the brachycephals, with truly Mongoloid affinity—affinity which is revealed by other characteristics—and the brachycephals with Pamirian, that is to say, European, affinity, who have nothing to do with the former. In Nepal and in Assam, where "Men with Mongoloid physiognomy still predominate,"[1] it is justifiable to ascribe the brachycephals that are found there—and they are a minority—to Mongolian infiltration and therefore to call them Mongoloids. It is the mesorrhine, platopic, brachycephalic type, of low stature and yellowish complexion whom Risley himself found along the Northern and Eastern frontiers of Bengal.[2]

---

[1] *Ethnographical Appendices* to "Census of India," 1901, Report.

[2] RISLEY (H. H.), *Tribes and Castes of Bengal*, Calcutta, 1891-1892; *The People of India, op. cit.*, p. 33.

But the Brahmans mentioned above measured by Chanda did not show any Mongolian feature, and Chanda excludes it in general from the Bengalis and Oriyas, who, against Risley's hypothesis, possess neither the Mongolian nor the Dravidian type. This proves, in fact, that the above hypothesis is inconsistent, since the invasion by Mongolians—and in large numbers—would have to precede the introduction of the Aryan language and culture in the territories of Bengal and Orissa; but not one argument is there that would favour such a prehistoric Mongolian migration, and on the other hand also a Mongolian invasion could be composed of mesaticephalic people as it has been in the case of the Avars in Europe, and it is high time to do away with the prejudice that a Mongolian invasion and an invasion by brachycephals are one and the same thing.

The same inconsistency is presented by the explanation that Risley offers for the brachycephals in the western part of the peninsula: he supposes that among the Gujrathis, the Marathis and the people of Coorg the brachycephals, who however are found in an appreciable proportion, are of Scythian origin. It is easy to object, as Chanda has done,[1] that the Scythians exercised a very brief dominion over the northern and western periphery of the Deccan and cannot be regarded as the progenitors of an immense mesati-brachycephalic population. These nomads of central Asia, who followed the Bactrians and the Parthians into India in the centuries immediately preceding and just beginning the Christian era, and are generally known as the Indo-Scythians, were certainly brachycephalic, according to Chanda, but too few in number, as is demonstrated by the fact that in the north of the peninsula, they have not succeeded in modifying, in the least, the indigenous physical type which has remained predominantly dolichocephalic. Much less, therefore, were they able to modify the physical character of the Dravidians of western India where their dominion was still more brief and intermittent; instead, even as far as the remote district of South Canara, in the coastal regions to the east of Mysore, we find the cephalic index (50 Billavas) to be 80·1. Evidently *the introduction of the brachycephals must go back to a prehistoric epoch*, covering an area much wider than that of the Indo-Scythians, as is seen from the examples in Summary IV, which I have taken from Thurston.[2]

---

[1] Chanda (R.), *op. cit.*, p. 68. Nevertheless the major part of these Mongoloids do not show the brachycephalic skull: see Table II at the end of this sketch.

[2] Risley (H. H.), *The Study of Ethnology in India.* "Journ. Anthrop. Inst." XX, 1891, p. 258.

---

[1] Chanda (R.), *op. cit.*, p. 67. The hypothesis of the Mongoloid invasion from Central Asia to account for the presence of the brachycephals in Western and Southern India, has been rejected also by Crooke (W.), *Rajputs and Mahrattas.* "Journ. R. Anthrop. Inst," XL. 1910, p. 46.

[2] Thurston (E.) and Rangachari (K.), *Castes and Tribes of Southern India*, Madras, 1909, Vol. I. Introduction, Tab. A and B. The same data are also found in part referred to by Risley, *The People of India*, op. cit. App. III, p. 398; the series of the Coorgs I have taken from that work, p. 334; I have omitted the other brachycephalic series which the reader may find in Risley, op. cit., p. 398.

SUMMARY IV.

Tribes of the Southern Deccan.

Names of the Tribes.	Language.	Individuals	Stature.	Ceph. Index	Nasal Index.
Holeya	Canarese	50	162·8	79·1	75·1
Bedar (Adoni)	,,	25		79·4	..
Karuba (Hospet)	,,	50	162·7	78·9	74·9
Mandya Brahman	,,	50	165·7	80·2	73·0
Caniga (Bellary)	,,	20	164·3	80·5	73·7
Wakkaliga (Mysore)	,,	50	167·2	81·7	73·0
Linga Banajiga (Adoni)	,,	30	163·4	80·1	74·1
Rangari (Bellary)	Marathi	30	161·3	79·8	73·6
Suka Sale	,,	30	160·3	81·8	74·8
Sukun Sale	,,	30	161·1	82·2	74·8
Billava	Tulu	50	163·2	80·1	72·6
Komati	Telegu	25		81·0	...
Corg	Kudagu	32	168·7	79·9	72·0

Whoever has any experience of figures knows that such a high average cannot be obtained without a certain percentage of brachycephals.

As regards the rise in the cephalic index that is observed in a still more remarkable degree in Beluchistan (*cf.* Table V) we have suggested, while speaking of the *Indo-Iranian* variety, that brachycephal individuals may belong, either to the *Pamirian* variety, as is probably the case with the Chhutas and the Bandijas, or to the *Altaic* variety, as we have demonstrated for the Hazaras, who are more to the north (Afghanistan). The influences of Central Asia accepted by Risley[1] are too vague and the denomination of "Turco-Iranian type" adopted by him is not very happy: differing from Sergi, he does not believe that here we have to do with Mongoloids, not even in the case of the Hazaras,[1] which, instead, he should have been able to concede.

---

[1] *The People of India*, op. cit., p. 66.

On general lines this is how Chanda writes: "......the physical anthropology of the Pamirs and Chinese Turkestan, as gathered from data collected by Ujfalvy and Sir Aurel Stein, indicates that we need not lay the Turks, the Scythians and the Mongolians under contribution to explain the presence of broad or medium heads among outlandic Indo-Aryans or Indo-Afghans."[2] Chanda believes that the hypothesis of Haddon may be really true: "it seems quite possible that these brachycephals are the result of an unrecorded migration of some members of the Alpine race from the highlands of south-west Asia in pre-historic times."[3] At that time it must have happened that when penetrating into India the immigrants of the type of *Homo Alpinus* found the middle portion of the Gangetic plain (the above-mentioned "Midland") in possession of the Vedic Aryans, and thence they proceeded to a lower territory, and, leaving aside the table-land of Central India, they descended along its eastern border as far as Orissa. Other waves of the immigrants descended along the western side, passing into the peninsula of Kathiawar and the Deccan. The last wave may have been that of the people speaking the Piśācha languages (the Kashmiris, the Darads and the Kafirs of the Hindukush), because the characteristics of such dialects are found in the majority of the languages of the Indo-Aryans of the outer zone.

---

[1] *Ibid.*, p. 36.

[2] CHANDA (R.), op. cit., pp. 70-71.—It gives me great pleasure to state that Chanda in his work referred to, which I have received from India after my note already cited, "*A proposito di alcuni risultati anthropologici*" etc. (published by me in the "Rend. della R. Acc. d. Sc. fis. e mat. di Napoli"), makes the same appraisement of the very unequal worth possessed by the facts gathered by Ujfalvy and Stein and by the hypotheses adopted formerly by other authors.

[3] HADDON (A. C.), *The Races of Man*, London, pp. 60-61; *cf.* also of the same author: *The Wanderings of Peoples*, Cambridge, 1911, p. 27.

There is, however, a difficulty: the Kafirs, the Kashmiris, etc., appertain to the dolicho-mesaticephals, of the Indo-Afghan type. Probably Chanda is more correct when at last he comes to the conclusion that the Piśācha peculiarity of such dialects might not have been derived from the invaders of Piśācha languages, but from invaders akin to the brachycephals of Eastern Turkestan who passed through the Hindukush and Kashmir where the above linguistic peculiarities have been better preserved. At present it is important to add that the brachycephals of Eastern Turkestan also, with the exception of the few Kirghizi and Taranchi, are prevalently of an European face, according to the researches of Stein published by Joyce. Their presence in some percentage—I do not think that they form the majority: (1) because Eastern Turkestan is not wholly peopled by brachycephals; (2) because the regions lying on the way to India are populated by dolichocephals—explains how as a consequence of their passage across Kafiristan and Dardistan, the cephalic index goes up in the case of the Kafirs and the Dards as compared with the Panditi, Pahari and Kulu-Lahuli, preserved in an out-of-the-way area, on the southern slopes of the Himalayas.

Crooke also declares that the hypothesis of the Huns or Scythians[1] is baseless for explaining the percentage of brachycephals found in southern and western India, but holds that they came in prehistoric times perhaps by the sea-route.

---

[1] CROOKE (W.), loc. cit., p. 48.—SERGI (*Europa*, op. cit., p. 447) declares that he is unable to explain the differences between the Scytho-Dravidians and the Dravidians pure, but does not accept the Scythism.

Our opinion, while for leucodermic India it is in favour of the Haddon-Chanda hypothesis, would, for melanochroid India, be in favour of another solution: this is the problem of the black brachycephals.

We think that the solution of such a question, is to be sought in the prehistoric ethnic stratification which can be reconstructed for the regions to the west of Hindustan. There are many indices of a primitive stratification with equatorial characters, characters which, while they are quite different from those of the white and the yellow races, comprehend in their morphology also those of the Negritos. Lately, Hüsing has admitted that in fact a coastal race of Negritos does appear as the most ancient population between India and the Persian Gulf.[1] Later, according to the same scholar, the interior of Iran might have had a Dravidian population, remnants of which are still to be found there, just as woolly-haired Negritos were preserved in Susiana up to historic times.[2] Now, the Dravidians, travelling from Iran into India, would have brought with them more brachycephalic elements, as we may suppose that these Negritos were, who anyhow are not wanting even in the Indian Peninsula. A band of Negritos is spread along the southern regions of Asia, and probably also Arabia—the terminal portion of anterior Asia, and comparable with regard to its geographical position with the Deccan, the terminal portion of the sub-Himalayan region—owes to the Negritos the elevation of the cephalic index among the inhabitants of the south.

---

[1] Hüsing (G.), loc. cit., p. 242.

[2] They are those referred to as Negroids in the work of Dieulafoy, *La necropole de Suse.*

The southern Arabs do not appear in the tables that I have prepared, since they represent an anthropological problem, it being not even quite certain that they are Leucodermic : those whom I have seen in the battalions of the Erythræan "Ascari" made me suspect that they were not so. At any rate, I can give here some averages about their stature and the cephalic index : from 147 southern Arabs measured by various authors Seligman[1] has shown lately that 13 (8·5%) are dolichocephalic, 56 (37·5%) mesaticephalic, and 78 (53·3%) brachycephalic. The averages that have been obtained from the various series are as follows :

SUMMARY V.

Southern Arabs.

			Individuals.	Stature.	Ceph. Ind.	Authors.
Arabs of	Muscat	...	31	164·9	78·28	Leys & Joyce.
,,	Sheher	...	82	161·6	80·92	,, ,,
,,	Yemen	...	20	164·8	81·07	,, ,,
,,	,,	...	16	163·6	83·56	Livi.
,,	,,	..	25	165·1	82·56	Mugnier.
,,	,,	..	9	160·5	79·50	Puccioni.

The cephalic indices of Livi on account of technical reasons are higher by about one than the indices that I have from other authors : with this correction it will be seen that the data in Summary V correspond exactly to those of Summary IV, for stature as well as cephalic index.

The doubt that Southern Arabia also owes its tendency to brachycephalism to an ancient negritoid substratum is made valid by the low stature of the Southern Arabs and also by the few examples of curly hair which are found among them.[1]

---

[1] SELIGMAN (C. G.), *The Physical Characters of the Arabs* "Journ. R. Anthrop Inst.," XLVII, 1917, p. 218. One finds further results in PUCCIONI (N.), *Studi sui materiali e sui dati antropologici ed etnografici* ecc. "Arch. per l'Antrop. e l'Etn.," XLVII, 1917 e XLIX, 1919.

Amongst the Hebrews also curly hair appears fairly frequent and it is sometimes accompanied by thick lips, although the Hebrews like the Arabs came originally from the north. But they descended so far towards the south as to meet those groups of dark natives, negritoids and others, which at that time extended from the mountains of Elam to those of Abyssinia and, by crossing with these, some have taken some somatic characters from them, as somatic characters are—as is known—transmissible separately.[2] Chronologically the descent of the Proto-Semites towards the equator must be placed at the same epoch as the peopling of Northern Africa by the Whites.

According to my opinion Africa did not intervene at all in peopling Asia. We have already said that according to Matthew's hypothesis successive waves left an anthropogenic centre situated in Central Asia, but this anthropogenic centre is in my opinion the leucodermic one. I place farther south the anthropogenic area of the more or less dark equatorial races, who are not necessarily all dolichocephalic : the same twofold division can be proved to exist, as among the Leucoderms and the Xanthoderms, so also in the other, more or less Melanochroid stock. I do not hold the preconception of Virchow of having water-tight compartments of the dolichocephals and brachycephals, adopted by the (Italian) polygenist anthropologists, as the greatest argument against the one origin for them both, which was far from the thoughts of Virchow himself. On the other hand, Sergi himself has not been able to unite together all the brachycephals of this world, which signifies that, according to

---

[1] For all these somatic comparisons *cf.* GIUFFRIDA-RUGGERI (V.), *Affinità antropologiche fra Etiopici e Arabi meridionali,* "Annuario R. Istituto Orientale di Napoli," anno accadem. 1919-20.

[2] *Cf.* GIUFFRIDA-RUGGERI (V.), *L'uomo attuale*, op. cit , Cap. I.

Sergi, somewhere else (in America, for example), they have originated together with the dolicho-mesaticephals; and if this has happened once or twice, it can also have happened three or four times.

Leaving aside this old fundamental difference, I am in accord with Sergi in the estimate of the closer affinity he perceives between the Dravidians and the Ethiopians with the exception of the Somâls and Gallas whose stature is too high. He says[1] that he does not find an affinity, anywhere else, with these Dravidians except in that African variety. I have precisely subdivided that variety into two sub-varieties, one of high stature and one of medium stature[2]: hence it is principally with this latter sub-variety that the aforesaid resemblance of *Homo Indo-africanus Dravidicus* shows itself. Sergi rightly separates from the Dravidians a highly platyrrhine type and of a stature less than medium, showing the greatest affinity with the Veddahs,[3] and together with this second type he also perceives a third, here and there in the peninsula, specially among the Kadirs, which type is also platyrrhine and of a low stature but with short and woolly hair and a Negroid face.[4] They are the remnants respectively of the Australoids and the Negritos, who were afterwards more clearly placed in relief by Biasutti.[5]

We think that the following *ethnic stratification* can be given for India, commencing with the more ancient strata:

(*a*) Negritos

(*b*) Pre-Dravidians (Australoid-Veddaic)

(*c*) Dravidians (having affinity with *H. Indo-africanus Æthiopicus*)

---

[1] Sergi (G.), *Europa*, op. cit., p. 469.

[2] Giuffrida-Ruggeri (V.), *Nuovi studi sull' antropologia dell' Africa orientale.* "Arch. per l'Antrop. e l'Etn." XLV, 1915, fasc. 2, p. 176.

[3] Sergi (G.), *Europa*, op. cit., p. 452.

[4] *Ibid.*, p. 450.

[5] Biasutti (R.), op. cit., pp. 98-100.

(*d*) Tall dolichocephalic (Mesopotamic?) **elements** (Toda).

(*e*) Dolichocephalic Aryans (*H.* ***Indo-europæus*** *dolichomorphus*).

(*f*) Brachycephalic Leucoderms (*H.* ***Indo-europæus*** *brachymorphus*).

These last, therefore, are in much attenuated proportion, as we have already said.

Our theory is that the Pre-Dravidians are Australoid-Veddahs and are not to be confused with an oriental extension of the Mediterranean race as Ripley thinks, or with Elliot-Smith's "Brown Race," whose anthropological consistency is somewhat equivocal, nor with Mitra's,[1] Indo-Erythrean race, which embraces the pre-dynastic Egyptians also and is supposed to be Pre-Dravidian. On the contrary we believe that for the countries surrounding the Erythrean sea—pre-historic Egypt included[2]—it is sufficient to admit a type with Proto-Ethiopian characters (*i.e.*, having Dravidian affinity), and not with Pre-Dravidian, *i.e.*, Australoid-Veddaic characters.

It would be useful to see what physical characters are presented by the pre-historic skulls of India mentioned by Mitra, especially those of Bayana, which he refers to as of Pre-Dravidic Veddah type, and those of Adichanallur, which, according to Lapicque are also Pre-Dravidic but in a different sense from ours *i.e.*, rather negroid. There is lacking, up to the present a good illustration of all these materials,[3] but we hope to have it soon with the progress which Anthropology is making in India, where the official teaching of this science has already been initiated and has been trusted to natives of the country, who are the most likely to know themselves and their past.

---

[1] MITRA (P.), *Prehistoric Cultures*, etc. op. cit., p. 183, and also ***Prehistoric Arts***, etc., op. cit., p. 60.

[2] *Cf.* GIUFFRIDA-RUGGERI (V.), *Were the Pre-dynastic Egyptians Libyans or Ethiopians?* "Man" XV, 1915, no. 1; and also: *A few notes on the neolithic Egyptians and the Ethiopians.* "Man," XVI, 1916, no. 6.

[3] Six of these skulls, which are in the Madras Museum collection gave THURSTON (op. cit., Introduction, p. xxvi, see there fig. *b*) four ceph. ind. below 60, but the other characteristics of these interesting prehistoric hyperdolichocephals of Southern India are unknown: one of these skulls is shown by Thurston in norma lateralis, it is prognathous with a receding forehead: on the whole they seem to show characteristics which are much less frequent in the actual population.

The Pre-Dravidians were followed by a finer type : although dark-skinned, the nose was less wide and not so deep at the root as in the Veddahs, and the profile much less prognathous, really almost orthognathous. It is the Dravidian type, akin to Ethiopian (not Negroid, but in our sense !).

If we arrange a series of jungle tribes in the order of descending nasal index, it will be seen, as we advance from the platyrrhiny to the mesorrhiny that there is an increase in the proportion per cent. of the Dravidian type, which we consider as mesorrhine, as contrasted with the type of their predecessors whom we consider as platyrrhine. This is seen in Summary VI taken from Tables A and B of Thurston.

SUMMARY VI.

Tribes of the Southern Indian Jungles.

	Individuals.	Stature.	Ceph. Index.	Nasal Index.
Panyan	25	157·4	74·0	95·1
Kadir	23	157·7	72·9	89·8
Kurumba	22	157·9	76·5	86·1
Sholaga ...	20	159·3	74·9	85·1
Irula of the Nilgiris ...	25	159·8	75·8	84·9
Mala Vedan	25	154·2	73·4	84·9
Kanikar	20	155·2	73·4	84·6
Paliyan	26	150·9	75·7	83·0
Chenchu	40	162·5	74·3	81·9
Urali	57	159·5	74·6	80·1

The Paniyans live in Wynad and parts of **Malabar** and of the Nilgiri district, and are described as "a dark-skinned tribe, short in stature, with broad noses and curly or wavy hair."[1] At the top of the platyrrhines as they are, it is astonishing that Risley, who refers to the same figures, considers them as characteristic Dravidians. It is seen that the conception of the Pre-Dravidian type was unknown to Risley and hence he was unable to characterise adequately the Dravidian type, which begins to appear solely in the last representatives of Summary VI but must be much diffused among the tribes of Summary IV: this type is especially represented by the tribes which we place together in the following Summary VII according to the data of the census of India.

SUMMARY VII

Typical tribes of Homo Indo-africanus Dravidicus.

	Individuals.	Stature.	Ceph. Index.	Nasal Index.
Kota of the Nilgiris ...	25	162·9	74·1	77·2
Badaga	40	164·1	71·7	75·6
Kuruba of Mysore ..	50	163·6	77·3	73·5

Comparing the last two summaries, one understands at once how the intercrossing of the jungle tribes with the Dravidian tribes has even at present the effect of diminishing the platyrrhine feature, as seen among the Tamil Irulas whose nasal index comes down to 80·4. Thurston expressly notes the physical change that takes place, when the tribes leave the jungle and approach the cities: thus the Canikars, who live near Travancore, have already 158·7 as stature and 81·2 as nasal index, instead of the low stature and the high nasal index

---

[1] THURSTON (E.) and RANGACHARI (K.), op. cit., Vol. VI, p. 57.

"which are characteristic of the unadulterated jungle tribes."[1]

A great elevation of the nasal index is found in the so-called (by Risley) Dravidian tribes of Chota-Nagpur and of Western Bengal: here are the tribes (Munda and Kol) of the northern jungles, whose habitat Biasutti[2] includes in the area where a purer Veddaic substratum has persisted. We think that these tribes have wrongly been called Dravidian by Risley, who gives as characteristic Dravidians the Santals of Chota-Nagur, who with the Panians present the highest nasal index in the whole of India, as is seen in the following Summary which I take from Risley himself.[3]

SUMMARY VIII.

(Pseudo-Dravidian) Tribes of Chotanagpur and its neighbourhood.

Tribes or Castes	Locality.	Individuals	Stature.	Ceph. Ind.	Nasal Index
Male	Santal Parganas ...	100	157·7	74·8	94·5
Mal Paharia	Do. ...	100	157·7	75·8	92·9
Korwa ...	Lohardaga ...	21	159·5	74·4	92·5
Manda (Munda) ...	Do. ...	100	158·9	74·5	89·9
Kharwar ...	Do. ...	100	160·5	75·5	89·7
Santal ...	Santal Parganas ...	100	161·4	76·1	88·8
Bhaiya ...	Lohardaga ...	100	157·7	76·0	88·7
Kharia ...	Do. ...	78	160·1	74·5	88·5
Lohar ...	Do. ...	73	162·1	75·8	88·7
Bhumij ...	Manbhum ...	100	159·2	75·0	86·5
Oraon ...	Lohardaga ...	100	162·1	75·4	86·1
Chik ...	Do. ...	29	158·9	78·8	85·9
Bhil ...	Mewar (Rajputana) ...	200	162·9	76·5	84·1

---

[1] *Ibid.*, Vol. I, Introduction, p. xlvii.
[2] BIASUTTI (R.), op. cit., p. 117, and the chart at p. 97.
[3] RISLEY (H. H.), *The People of India*, op. cit., p. 399.

Similarly the 29 Santals (settled near Ghoraghat in the district of Dinajpur) who were measured by Chanda[1] present nasal indices that range from a minimum of 76·6 to a maximum of 118·4.

Deniker recognises that the Veddahs are the remnants of a very primitive population "whose physical type is most approached by the platyrrhinous variety of the Dravidian race,"[2] thus indicating precisely the Santals, the Mundas, the Kols, the Bhumij, of whom we have given the anthropometric measurements in Summary VIII. We prefer to confine the Dravidian race to the mesorrhine type.[3] In such manner we confer on the Pre-Dravidians the present numerical preponderance, and their importance in the ethnic stratification of India augments proportionally.

Everything induces us to hold that the Dravidians have really been a small number of *invaders, who have introduced their languages,* and even that not everywhere, since in the Munda-Kol zone more ancient languages have been preserved. It is logical that if the languages have remained inspite of the Dravidian influence, those who speak them should also have been little contaminated. There is, therefore, no reason to consider them as platyrrhine Dravidians, but certainly as Veddaic or Australoid; and from the fact that between the Munda-Kols of the North and the Veddahs of the south there intervene other platyrrhines (the Paniyans, etc.), these latter also represent the same ancient Pre-Dravidian formation that extended at one time over the whole of India and is even now much less affected by the newcomers (Dravidians, Aryans, etc.), than one might think ![1]

---

[1] CHANDA (R.), op. cit., p. 254.

[2] DENIKER (J.), op. cit., p. 479.

[3] In that case it will do no more to speak with Haddon: "The Munda-speaking peoples are stated to resemble so closely to Dravidians as to be indistinguishable from them" (*The Wanderings of Peoples*, op. cit., p. 26).

With this reconstruction of ours is in accord what Chanda has written of the people found by the Aryans at the time of their descent into India: *since it seems that the Aryans really found themselves confronted by the Veddaic people, the Dravidians remaining rather in the second line.* I draw the following facts from Chanda.

The Dasyus, or Non-Aryans of Vedic India, are the true Aborigenes:[2] they are the fifth order of Vedic society, namely the Nishādas, who are mentioned in the most ancient literature and also afterwards in the Mahābhārata (XII, 59, 94-97) in the following terms: "The Nishādas, that is, these malicious tribes living in the hills and forests." But more important are the Puranic legends: in the Bhāgavata Purāṇa (IV, 14, 44) the Niṣādas are described as "black as crows, very low in stature, with short arms, having high cheek bones, low topped nose," etc. In the Vishṇu Purāṇa (I. 13) the same Niṣādas are described as of "the complexion of a charred stake, with flattened features and dwarfish stature." Evidently they were too numerous to be made slaves *en bloc* and the Aryans confined themselves to despise them and to describe them unfavourably: in their description the anthropologist discerns the protomorphic equatorial characters: low stature, very dark pigmentation and platyrrhiny. The present Bhils and Gonds who live in the Vindhya hills—against which was the Aryan struggle—often present such characters.

---

[1] This is in accord with what Biasutti writes (op. cit, p. 101). "The Veddaic stratum, in form often much modified but always recognisable, has in this region a habitat almost continuous."

[2] According to CHANDA (op. cit., p. 1, et seq.), it has been erroneously asserted that the Śūdras represented the aborigines while they are none other than slaves, and they could also be Aryans, because in the Vedic period the Aryans fought not only against the Dāsas or Dasyus but also among themselves.

Chanda maintains that the Munda language has been spoken by the entire Niṣāda or Pre-Dravidian race, and has been preserved only by a part of them, namely, the wild tribes of Chotanagpur and the Savaras and Juangs of Orissa. The Bhils, instead, have taken up the Indo-aryan language, and the Gonds, the Khands and the Oraons together with the tribes of the South Indian jungles have taken up the Dravidian language. In all these tribes are found included the pre-existing Negritos.

While Thurston thinks that the Veddahs and the tribes of the South-Indian jungles may be called Pre-Dravidians,[1] Lapicque maintains instead, by observations that he has himself made in the interior of the Peninsula—that the Pre-Dravidian was of Negro type. He has seen on the border of the virgin forest and also on the hills partially covered with wood, "some groups in whom the Negro face, clearly designed, is wholly predominant." In these groups, "the hair is generally curled and among them may be observed some that may even be called woolly."[2] This is not surprising, if, as already I have pointed out, we are dealing with remnants of the Negritos.

---

[1] THURSTON (E.) and RANGACHARI (K.), op. cit., Vol. I, Introduction, p. xxxi.

[2] Lapicque (L.), *Les Nègres d'Asie et la race Nègre en général.* "Rev, Scient." VI, July, 1906.

IV

Veddaic people and Negritos are also found outside India showing some relation between each other and precisely with regard to their language, if we take into consideration the conclusions of Father Schmidt,[1] who finds linguistic affinities among the Mundas of India, the Nicobarese (Negritos), the Palong, the Wa and Rieng of the Salwin basin, the Sakai (Veddaics) and Semang (Negritos) of the Malacca Peninsula,[2] and the Mon-Khmer of Indo-China. The Tibeto-Burman dialect also which prevails in the Himalayas, from Kunawar in the Punjab up to Darjeeling, preserves traces of an ancient language which undoubtedly has Munda characteristics, as also the language of the Khasis of Assam, though their physical appearance is rather Mongoloid.

I am forced to conclude that these protomorphic Asiatics had a linguistic unity which was wider than their somatic unity, but which must have been acquired secondarily, the Pre-Dravidians by their greater expansion having encroached upon Negritoid nucleuses. The Mon-Khmer affinities extend themselves into Indonesia, but here also we pass gradually into another somatic unity, since the Indonesians cannot be confounded either with the Negritos or with the Veddaics, although they are less distant from the latter than from the former and have many kindred relics in Indo-China. We pass over the anthropology of Indonesia of which the outlines have already been traced in another work[1]: the anthropometric diagnosis of the two **Indonesiatic** varieties—they appear in the system as a small species and a variety—is given according to the data in Tables VII, VIII and IX. We include in a last Summary all these data and those of Tables X, XI and XII, which refer to the varieties with which we have been occupied in this last part, so that herein may be found the anthropological position of all of them.

---

[1] SCHMIDT (W.), *Die Mon-Khmer-Völker.* "Arch. f. Anthrop." N. F., V, 1906; and also *Die Gliederung der Australischen Sprachen.* Wien, 1919.

[2] CHANDA (op. cit., p. 9) mentions the Sakai and the Semang as having affinity with the Veddahs, but this is not quite accurate since the Sakai and the Semang differ from each other, the Semang as well as the so-called black Sakai having characters mostly of the Negritos, for which reason they are separated from the Veddaics in our tables (X, XI and XII).

SUMMARY IX.

Anthropometric Characters of Natives of the Indian Peninsula and some islands

	Stature.	Ceph Index (Living)	Nasal Index (Living)
H. Australis Veddaicus	1571·1589	74·5·75·1	84·2-89·9
H. Australis Veddaicus Senoicus ...	1520·1562	75·5-78·7	85·6·91·9
H. Australis Veddaicus toala ...	1573	82·2	......
H. Pygmaeus Asiaticus	1490·1507	77·7·83·7	97·1
H. Pygmaeus Asiaticus Andamanicus ..	1485	82·9	......
H. Pygmaeus Asiaticus Philippinensis ...	1461	85·5	101·9
H. Indo-africanus Dravidicus [2] ..	1629·1636	71·7·77·3	73·5·77·2
H. Oceanicus (?) Ainu	1567·1581	76·5·77·3	.....
H. Indonesiacus	1520·1607	75·5·81·5	77·3·100·4
H. Indonesiacus brachimorphus ..	1543·1628	82·1·86·0	75·2·92·6

---

[1] GIUFFRIDA-RUGGERI (V.), *I caratteri craniologici degl' Indonesiani*, loc. cit.

[2] These refer to Summary VII in the text.

As will be seen, in this summary the Todas do not appear beside the Ainus, notwithstanding that De Quatrefages and Sergi have placed them together, which probably the former would not have done, if he had known the remarkable points of difference that have since been ascertained. The stature, the somatic proportions and the facial aspect, specially with regard to the nose and the cheek-bones, all give a very different morphology which the hypertrichy succeeds in covering insufficiently and only at first sight.[1] The Todas therefore are placed among the unclassified of Tables IV (occupying a position very near the maximum height), V and VI, it not being possible, on account of their marked occidental physical aspect, to place them outside the Leucoderms,[2] if ethnic anthropology corresponds to something concrete rather than being simply subjective.

A last hypothesis about the Ainus has been started by Bonarelli; he says, "I am of opinion that Tibet was inhabited originally by a human type of the Indo-Irano-Mediterranean group who afterwards pushed on as far as Japan where the still living Ainus appear to be their modern descendants. In other words, I do not see that these Proto-Iranoids could have advanced as far as Japan (leaving in China evident traces of their passage), by any other way than the Tibetan region."[3] It seems to me that this migration to the islands of the Pacific could have taken place only in very ancient times when, China being almost uninhabited, it would have escaped the contamination of type. If this hypothesis takes us back to an epoch in which central Asia was not yet divided between the Leucoderms and the Xanthoderms, when these types perhaps had not yet come into existence, then we have still greater reason on our side to consider the Ainu as an archeomorphous (this term is preferred by Bonarelli) relic, without actual systematic affinity.

---

[1] The hypothetic "Toda-Ainu" has been criticised also from the geonemic point of view by BIASUTTI (op. cit., p. 115, note 4). He notes (*ibid*, p. 61) moreover, that the nasal index of the Ainus taken by Koganei cannot be made use of, like the others that are ordinarily taken, and therefore the average given by Koganei, evidently too low, does not appear in our summary IX.

[2] As something rather comic, may be cited what we read on p. 116 of the treatise, *Les races humaines* published about 1910 on the Todas, who are said to be related by their hairiness to the Australians, by the formation of their head to the ancient Romans, and, lastly, considered "to be the most ancient race of India having preserved some of the peculiarities of the Negritos." Happily the author has remained anonymous.

[3] BONARELLI (G.), *Alcuni problemi d'antropologia sistematica.* "Anal. Soc. Cient. Argent." T. LXXXV, Buenos Ayres, 1918, p. 48.

Probably the two subdivisions of *H. Indonesiacus*, made according to the approximate indication derived from the cephalic index, are not sufficient and one ought to examine the other characters, as we have done for *H. Asiaticus* ; the nasal index specially shows too great oscillations which might be distributed into several minor groups. It would be desirable that the large islands of Indonesia were subjected to an extensive anthropological survey like that splendid one that Great Britain has made in India, and as the United States are doing for the Philippine Islands. The measurements of Hagen are hardly useful—he takes the nasal length on the ridge of the nose—and also the high nasal ndex found by Kohlbrugge among the Tengerrese would require to be confirmed.

In Summary IX those islanders that have the characters of *Homo Asiaticus* are not included, since they would be out of place, such for example, as many natives of the Philippines, and so also the natives of Formosa. On the contrary many of the Formosans and likewise the Igorots of Luzon are considered by Hrdliçka[1] as good representatives of the primitive yellow type. The Igorots are shown among the unclassified in Tables I, II, and III, and if confronted with the fundamental summary about *H. Asiaticus* which is our Summary I, it is seen at once that their nasal index is too high. Instead, the Formosans fit exactly by stature, cephalic index and nasal index into the frame of the *H. Asiaticus protomorphus*, who include much of the population of Assam, the Miao-tsè and Lu-tsè of the Cuang-so and other neighbouring tribes (Lissu, Lolo), considered for a long time as the most primitive populations of this sub-Chinese region.

---

[1] Hrdliçka (A.), *The Genesis of the American Indian*, "XIX International Congress of Americanists," Washington, 1917, p. 565.

We have evidently here a dolicho-mesaticephalic type, which Hrdliçka finds also in a large portion of Tibet, in Mongolia; in various parts of Siberia—and this study of ours confirms it (*vide* Tables I, II, and III)—and who are not entirely wanting, neither in China nor in Corea, nor in Japan. Only we observe that in all these regions it is less platyrrhine than in south-east China (and much less platyrrhine than in the Philippines); so that it is necessary to decide whether the existence of the platyrrhine character is explained by the greater primitivity of these southern populations, or whether it is explained by an admixture that occurred with another human type, which presented the platyrrhine feature among its morphological characters.[1]

The recent work of Williams[2] gives us an idea of the ethnic stratification which seems to be found in S.E. Asia. Williams holds that towards 1100 B.C. Burmah,

---

[1] For the Igorots measured by Kroeber, to which the nas. ind. of Table III refers, there can be no doubt that we are dealing with an admixture with the Negritos as we have an average of 99·8, max. 135·5 and min. 82·6: I therefore—the unreliable nature of such data is well known to us—place them among the unclassified. The pure type (or Bontoc Igorots) has certainly not so high a nas. ind.: it is only necessary to see their portraits published by Bean, Worcester, Yenks, and others, as is suggested in the "Amer. Journ. Phys. Anthrop.", Vol. II, 1919, p. 442.

[2] WILLIAMS (E. T.). *The Origins of the Chinese.* "Amer. Journ. Phys. Anthrop." Vol. I, 1918, n. 2.

Siam, Cambodia, Annam, and probably a portion of Southern China were partially inhabited by wild Negritos, who were gradually pushed to the mountains (he affirms that in Burmah there are still some Negritos, who are called Selung) and towards the sea. It remains to be known where they can have gone once they reached the Chinese sea, because they are not to be found in the coastal region; it would be interesting to know now whether the Negritos of the Philippines, are a transplantation of the continental Negritos, who at one time—the epoch cannot be precisely stated and this is hardly of any importance—held the southern zone of Asia; besides, it would be most important to ascertain whether the transmigrated Negritos have been followed by *H. Asiaticus protomorphus*. In fact, this last would have been able in this way to acquire a meso-platyrrhine character more accentuated than their own, whether on the continent or in the islands, the platyrrhine feature being precisely a conspicuous morphological character of the Negritos. This solution has the advantage of doing without the Indonesian type in the Philippines, which could have been peopled in another way than Indonesia; only in later times the Malayan diffusion—which has very little anthropological importance—has uniformly worked on the coasts of all these insular territories, giving rise to an extensive metamorphosis, which lends itself to various interpretations.[1]

Nothing useful for Ethnology can be drawn from the analytical works of Bean, who has been led astray by the mirage of the identification of the individual morphological type: individually there are crania of Cro-Magnon type and of an infinite number of other types—but it is all an illusion due to the metamorphism which has taken place. In whatever part of the habitable globe such a process has been proved to have taken place—Pycraft has ultimately selected Dutch New Guinea—there results a similar pseudo-zoological hotch-potch, when one considers the individual resemblances brought out by the profile of a cranium. Even for morphological analysis one needs "the grain of salt," which is easily lost when one follows the main road of the migrations by sea dear to Elliot Smith.

---

[1] I recommend to the reader the useful work of SULLIVAN (L. R.), *Racial Types in the Philippine Islands*. "Anthrop. Pap. Amer. Mus. Nat. Hist." XXIII, Part I, New York, 1918. The reader will also find here many series of natives (stature, ceph. ind. and nas. ind.) which we have omitted on account of their uncertain systematic collocation.

We need not occupy ourselves with them, although we hold that the Indonesians and the Polynesians are off-shoots of the yellow stock, who by their insular residence have become distinct species or sub-species.

In the interior of the Asiatic continent the centre of propulsion of the ethnic movements appears to be situated in the north. The Shu who later were called the Chinese, lived in ancient times in the upper valley of the Yellow River, but their traditions place the cradle of their race more to the N.W. The classical work denominated *Shan Hai King,* written not later than 1122 B.C., shows that the Chinese of that epoch referred always to the N.W. as the country of their ancestors and demigods. In this same region there was somewhere a country of "white men": the marvellous country of the mythical ancestors is beyond the "North Western" Sea. Williams believes that it refers to Kokonor; but there are other lakes of the same and even larger dimensions (*e.g.*, Issik-Kul and Balkash which is very large) towards Thiansan and Zungaria, which are really the regions to the N.W. of China: a lake larger than the present Lobnor occupied probably the depression in which the Tarim flows. It is useless to insist on what, for the time at least, cannot be affirmed with any decisive proof, nor do I wish to bring in here other arguments which are known by specialists of other branches of science; but every one sees that in various ways the possibility of the double anthropological centre in the north[1]—centre of origin of the two great human types the white and the yellow (beside which there are only equatorial types who are more or less pigmented)—is strongly placed before the attention of physical anthropologists, without making any excessive appeal to their faculty of imagination, by which it is well that they should not be overmuch endowed.

---

[1] Granted the theory of Ologenesis it would perhaps be a case of species by couples that is to say of two twin species, born, as Rosa says, "by the duplication of a common immediate progenitor." Even many of Rosa's theoretic previsions seem to be confirmed by facts: Rosa writes: "These species by couples ought to be recognised by characters which make them closely approach each other, leaving a considerable interval between the two species of the couple and those near, perhaps also they might with some facility produce hybrids among themselves, although not stable, and then they ought to occupy almost a common area, inspite of eventual differences of habitat, and the two species ought to be found associated with each other even in regions that are not connected." ROSA (D.), *Ologenesi. Nuova teoria dell' evoluzione e della distribuzione geografica dei viventi.* Firenze, 1918.

The so-called *allogenes* of Indo-China. the Pseudo-Mediterraneans of New Zealand and others would find an explanation in a common progenitor. And the theory would take a decisive step forward. if one could verify between the two species some constant relations in the number of the *cromosomes*; which should not be very difficult.

SYNOPSIS METHODICA

Tables to be used for the making of new maps of the geographical distribution of anthropometrical characteristics in Asia (almost all the data which are found in the text in Summaries III, IV, V, VI, VII and VIII are here omitted.)

ANTHROPOMETRIC TABLES.

Tab.	I.—Stature of the Asiatic Xantoderms	88	series
„	II.—Ceph. Ind. „ „	85	„
„	III.—Nas. Ind. „ „	62	„
„	IV.—Stature of the Asiatic Leucoderms	53	„
„	V.—Ceph. Ind. „ „	63	„
„	VI.—Nas. Ind. „ „	46	„
„	VII.—Stature of the Indonesians and allied peoples	31	„
„	VIII.—Ceph. Ind. „ „	31	„
„	IX.—Nas. Ind. „ „	26	„
„	X.—Stature of the Australoids, Negroids, etc.	17	„
„	XI.—Ceph. Ind. „ „	16	„
„	XII.—Nas. Ind. „ „	9	„

TABLE I.

Stature of the Asiatic Xantoderms.

	Individuals	Averages	Percentages				Authors or former compilations
			×-1600	1601-1650	1651-1700	1701-×	
H. asiaticus Chinese	138	1627	37	30	21	12	Iv. (1911)
,, ,, northern (soldiers)	942	1676					Koganei
,, ,, ,, majority from Chi-li	38	1674					Gaupp
,, ,, west of Se-chuan	100	1612					Legendre
,, ,, southern	15582	1622					D. (1900)
,, *neoarcticus* Chukchi	162	1625	42	49	16	13	Iv. (1911)
,, ,, Eskimo asiatic	61	1623	41	33	21	5	,, ,,
,, *paleoarcticus* Jukaghiri	70	1560	86	14			,, ,,
,, ,, Coriachi	197	1599	57	30	13		,, ,,
,, ,, Camchadales	63	1601	44	40	10	6	,, ,,
,, ,, Tungus from Ghiscighinsk	52	1565	17	15	6	2	,, ,,
,, ,, ,, ,, Anadir	22	1574	77	14	9		,, ,,
,, ,, ,, ,, Colima	9	1588	78		11	11	,, ,,
,, ,, Orotsci	37	1545					,, (1904)

" " Caragassi … … … …	20	1589					" "
" " Ostyaks from the Obi … … …	195	1579					" "
" " " " … … …	127	1565	72	22	3	2	Rudenko
" " Vogula northern … … …	75	1567	72	24	4		"
" " *brachimorphus* Samoyed … …	54	1568	69	20	11		"
" " " " Tavgi … …	37	1570					Czaplįçka
" " " " Yurak … …	21	1587					"
" " " Tungus western … …	116	1580					"
" " " Ostyaks Yenisseians …	25	1540					D. (1900)
" " " Soyots … … …	72	1597					" "
" *altaicus* Beltiri … … … …	78	1607	43	36	18	3	Iv. (1911)
" " Cachini … … … …	42	1619	36	31	29	4	" "
" " Coibali … … … …	39	1613	36	38	23	3	" "
" " Chisili … … … …	87	1626	30	41	22	7	" "
" " Melezki … … … …	37	1598	41	38	16	5	" "
" " Sagai … … … …	60	1620	35	33	25	7	" "
" " Yakuts … … … …	207	1624					Mainoff
" " Lebedins … … … …	61	1626					Hildén
" *centralis* Manchu … … … …	18	1630					Torii

TABLE I.—*continued.*

	Individuals	Averages	Percentages				Authors or previous compilations
			× .1600	1601-1650	1651-1700	1701-×	
H. asiaticus centralis Tungus transbaical	45	1638					Iv. (1904)
,, ,, ,, chamnegani	20	1614	25	20	45	10	,, (1911)
,, ,, ,, southern	86	1631					Mainoff
,, ,, Buryats	825	1631					Iv. (1904)
,, ,, Mongols-Torguts from Zungaria	296	1629					D. (1900)
,, ,, Kirghis-Kazak	387	1638					,, ,,
,, ,, ,, middle tribe		1651					Iv. (1904)
,, ,, Carakirghis	83	1676	11	19	38	32	,, (1911)
,, ,, Taranchi	374	1646	25	29	26	20	,, ,,
,, ,, ,, Turfan	77	1663					Joyce
,, ,, Hazara (Afghanistan)	200	1684					Cens. Ind.
,, ,, Telengets	238	1636					Lutzenko
,, ,, ,, ...	29	1631					Hildén
,, *tibetanus* Ladaki	31	1634	29	51	10	10	Iv. (1911)

"	"	" … … … …	41	1638	22	39	22	17	**Biasutti**
"	"	**Tibetans eastern** … … …	155	1640	32	23	25	20	**Iv. (1911)**
"	"	**Kambu (Nepal)** … … …	32	1571					**Cens. Ind.**
"	"	**Mangor** " … … …	35	1587					" "
"	"	**Murmi (Nepal and Darjeeling)** … …	65	1669					" "
"	"	**Gurung** " " … …	28	1633					" "
"	"	**Lepcha (Sikkim)** … … …	57	1570					" "
"	"	" **Rong (Sikkim)** … … …	36	1584					" "
"	"	*brachimorphus* **Changpà (Tibet)** … …	32	1622	35	28	31	6	**Biasutti**
"	"	" **Limbu (Nepal)** … …	50	1603					**Cens. Ind.**
"	*protomorphus*	**Khasia (Assam)**. … … …	81	1569					" "
"	"	**Bodo** " … … …	33	1608					" "
"	"	**Mande** " … … …	34	1588					" "
"	"	**Misbing** " … … …	25	1564					" "
"	"	**Arleng** " … … …	18	1633					" "
"	"	**Lissu (Yun-nan)** … … …	9	1608	33	33	33		**Iv. (1911)**
"	"	**Lolo (Se-chuan)** … … …	29	1675					**Legendre**
"	"	" " … … …	6	1635					**Delisle**
"	"	**Miao-tsè (Cuang-si)** … … …	31	1550					**Torii**

TABLE I.—*concluded.*

	Individuals.	Averages.	Percentages. × -1600	1601-1650	1601-1700	1701- ×	Authors or previous compilations.
H. asiaticus protomorphus Lu-tsè (Cuang-si)	10	1594	50	10	40	—	Iv. (1911)
,, ,, Formosans	46	1605					Torii
,, *meridionalis* Chakma (Rangamati)	100	1595					Cens. Ind.
,, ,, Burmans	231	1649					D. (1900)
,, ,, Anamites	174	1569	46	35	14	4	Iv. (1911)
,, ,, ,, ...	457	1585					D. (1900)
,, ,, Laotians	56	1590					,, ,,
,, ,, Siamese	30	1607					,, ,,
Unclassified Groups arranged in the order of stature:							
Igorots (Luzon)	104	1540					Bean
Malays from Malacca	12	1583	57	17	16	—	Iv. (1911)
Japanese	25000	1585					D. (1900)
Keria (Cashghar)	15	1589	53	27	20	—	Iv. (1911)
Malays from South-Perak	36	1594					Annandale

Taytay (Luzón)	183	1595					Bean
Koreans	113	1615	37	41	12	10	Iv. (1911)
Japanese	10	1617					Bean
Zungàri	296	1629					D. (1900)
Koreans	—	1631					Jijma
Dungani	44	1666	16	20	36	28	Iv. (1911)
Siba (Zungaria)	38	1675					D. (1900)
Usbegs	292	1675	11	22	30	37	Iv. (1911)
Loplik (Cashghar)	38	1695					Joyce

TABLE II. Ceph. Ind. of the Asiatic Xantoderms.

	Individuals.	Averages.	Percentages.					Authors or previous compilations.
			x-75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34-x	
H. asiaticus Chinese	138	79·66	9	23	18	27	23	Iv. (1911)
,, ,, northern	942	80·2						Koganei
,, ,, western	100(?)	79·3						Legendre
,, *neoarcticus* Chukchi	171	82·0	2	13	23	35	27	Iv. (1911)
,, ,, Eskimo asiatic	60	80·8	3	13	37	32	15	,, ,,
,, *paleoarcticus* Jukaghiri	59	80·4	2	20	32	34	12	,, ,,
,, ,, Ooriachi...	193	80·0	2	16	25	36	21	,, ,,
,, ,, Camchadales	63	78·5	18	30	33	13	6	,, ,,
,, ,, Tungus from Ghiscighinsk	46	78·7	24	37	17	20	2	,, ,,
,, ,, ,, Anadir	23	80·8	9	4	35	35	17	,, ,,
,, ,, ,, Colima	10	78·5	20	30	30	20	—	,, ,,
,, ,, Ostyaks from the Obi	195	79·28						,, (1904)
,, ,, ,, ,, ,, ,, ...	127	80·7	2	21	15	36	25	Rudenko
,, ,, Voguls northern	75	78·3	11	31	31	24	3	,,

,,	,,	*brachimorphus* Samoyed	54	83·3	—	—	15	40	45	,,
,,	,,	,, ,, ...	88	83·95						Iv. (1904)
,,	,,	,, ,, Tavgi	37	85·6						Czapliçka
,,	,,	,, ,, Yurak	21	84·8						,,
,,	,,	,, Tungus Western ...	116	85·1						,,
,,	,,	,, Ostyaks Yenisseians ...	—	83·1						Sinelnikov
,,	,,	,, Soyots	72	83·03						D. (1900)
,,	*altaicus* Beltiri	... ...	74	79·58	8	20	34	27	11	Iv. (1911)
,,	,,	Cachini	34	82·44	6	5	12	35	41	,, ,,
,,	,,	Coibali	35	80·10	—	14	37	31	18	,, ,,
,,	,,	Chisili	64	80·42	2	16	25	36	21	,, ,,
,,	,,	Melezki	35	81·62	—	11	23	40	26	,, ,,
,,	,,	Sagai	60	80·85	3	10	22	45	20	,, ,,
,,	,,	Yakuts	207	82·66						Mainoff
,,	,,	Tatars from Altai	16	79·5						D. (1900)
,,	,,	Lebedins	61	80·1						Hildén
,,	*centralis* Manchù	... ...	61	86·8						Torii
,,	,,	Tungus chamnegani	23	84·34	—	13	13	35	39	Iv. (1911)
,,	,,	Buriats	816	85·87						,, (1904)

TABLE II—*continued.*

	Individuals.	Averages.	Percentages.					Authors or previous compilations.
			× -75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34- ×	
H. asiaticus centralis Torguts	103	84·73						Iv. (1904)
,, ,, Kirghis	405	87·00	—	1	3	15	81	,, (1911)
,, ,, Carakirghis	78	84·55	—	—	16	42	42	,, ,,
,, ,, Taranchi	368	86·46	1	2	7	16	74	,, ,,
,, ,, ,, Turfan	72	85·07						Joyce
,, ,, Hazara (Afghanistan)	209	85·00						Cens. Ind.
,, ,, Telengots	238	86·1						Lutzenko
,, ,, ,, ...	29	86·2						Hildén
,, ,, Calmuks from Culgia and Tarbagatai ...	197	84·5						Iv. (1904)
,, *tibetanus* Ladaki	34	76·76	26	44	18	6	6	,, (1911)
,, ,, ,, ...	41	77·8	19	32	27	15	7	Biasutti
,, ,, Tibetans eastern	108	81·00	4	18	17	37	24	Iv. (1911)
,, ,, Tibetans eastern	11	77·07						Delisle

,,	,,	Kambu (Nepal)	32	81·0						Cens. Ind.
,,	,,	Mangor	35	79·0						,, ,,
,,	,,	Murmi (Nepal and Darjeeling)	65	79·5						,, ,,
,,	,,	Gurung ,, ,,	28	81·6						,, ,,
,,	,,	Lepchà (Sikkim)	57	79·9						,, ,,
,,	,,	Lepchà Róng (Sikkim)	36	80·5						,, ,,
,,	,,	*brachimorphus* Chángpà (Tibet)	32	83·3	—	5	16	32	47	Biasutti
,,	,,	,, Limbu (Nepal)	50	84·3						Cens. Ind.
,,	*protomorphus*	Khasia (Assam)	81	78·6						,, ,,
,,	,,	Bodo ,,	33	78·4						,, ,,
,,	,,	Mande ,,	34	75·9						,, ,,
,,	,,	Mishing ,,	25	80·8						,, ,,
,,	,,	Arleng ,,	18	77·9						,, ,,
,,	,,	Lissu (Yun-nan)	9	77·2						Delisle
,,	,,	Lolo (Se-chuan)	29	79·4						Legendre
,,	,,	,, ,,	6	77·92						Delisle
,,	,,	Miao-tsè (Cuang-si)	40	80·6						Torii
,,	,,	Lu-tsè ,,	10	77·16						Delisle
,,	,,	Formosans	44	79·4						Torii

TABLE II—*concluded.*

	Individuals.	Averages.	Percentages. × .75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34. ×	Authors or previous compilations.
H. asiaticus meridionalis Chakma (Rangamati)	100	84·3						Cens. Ind.
„ „ Burmans	231	83·1						D. (1900)
„ „ Anamites	105	82·65	—	4	15	41	40	Iv. (1911)
„ „ „	182	82·8						D. (1900)
„ „ Laotians	56	83·6						„ „
„ „ Siamese	17	85·5						„ „
Unclassified Groups arranged according to rising ceph. ind. :								
Dungani	38	76·98	29	24	34	8	5	Iv. (1911)
Japanese	10	77·65						Bean
Igorots (Luzon)	104	77·6						„
Loplik (Cashghar)	38	77·92						Joyce
Japanese	116	78·15	16	27	33	18	6	Iv. (1911)
Malays from Malacca	12	81·29	—	8	33	33	26	„ „

Taytay (Luzon)	182	81·79						Bean
Malays from South-Perak	37	82·3						Annandale
Cambodians	30	83·6						D. (1900)
Koreans	113	83·61	3	9	10	19	59	Iv. (1911)
Usbegs	282	86·18	—	2	5	22	71	„ „
Keria (Cashghar)	16	86·9	—	—	6	31	63	Joyce

TABLE III. Nasal Ind. of the Asiatic Xantoderms.

	Individuals.	Averages.	Percentages. x-70·00.	 70·01-85·00.	 85·01-x	Authors or former compilations.
H. asiaticus Chinese	130	79·03	15	57	28	Iv. (1911)
" "	100(?)	72·9				Legendre
" *neoarcticus* Chukchi	9	78·70	11	78	11	Iv. (1911)
" *paleoarcticus* Ostyaks from the Obi	127	76·5	16	69	15	Rndenko
" " Voguls northern	74	79·1	7	75	18	"
" " *brachimorphus* Samoyed	54	77·0	11	83	6	"
" " " " Tavgi	37	78·1				Czaplişka
" " " " Yurak ...	21	76·9				"
" " " Tungus western ...	116	76·6				"
" " " Ostyaks Yenisseians ...	—	76·3				Sinelnikov
" " " Soyots	72	70·2(?)	47	52	1	Iv. (1911)
" *altaicus* Beltiri	73	78·00	16	69	15	" "
" " Cachini	84	78·00	27	53	20	" "

„	„	Coibali	35	78·84	14	60	26	„ „
„	„	Chisili	65	74·51	20	78	2	„ „
„	„	Melezki	35	71·15	43	54	3	„ „
„	„	Sagai	6)	73·07	28	65	7	„ „
„	„	Lebedins	61	78·90				Hildén
„	*centralis*	Manchù	19	63·4(?)				Torii
„	„	Tungus chamnegani	23	71·68	52	39	9	Iv. (1911)
„	„	Buriats	—	72·5				Porotoff
„	„	Torguts	—	60·46(?)				Iv. (1904)
„	„	Kirghis	172	68·94	56	37	7	„ (1911)
„	„	Carakirghis	47	75·97	28	55	17	„ „
„	„	Taranchi Turfan	72	78·29				Joyce
„	„	Hazara (Afghanistan)	200	80·5				Cens. Ind.
„	„	Telengets	29	75·6				Hildén
„	*tibetanus*	Ladaki	31	75·54	29	42	29	Iv. (1911)
„	„	„	41	75·51	29	56	15	Biasutti
„	„	Tibetans eastern	144	73·56	34	51	15	Iv. (1911)
„	„	„ „	11	74·47				Delisle
„	„	Kambu (Nepal)	32	76·6				Cens. Ind.

TABLE III—*concluded.*

	Individuals.	Averages.	Percentages.			Authors or previous compilations.
			x-70·00	70·01-85·00	85·01-x	
H. asiaticus tibetanus Mangor (Nepal) ...	35	76·6				Cens. Ind.
" " Murmi (Nepal and Darjeeling) ...	65	75·2				" "
" " Gurung " " ...	28	78·5				" "
" " Lepchà (Sikkim)	57	67·2				" "
" " Lepchà Rong (Sikkim)	36	78·2				" "
" " *brachimorphus* Changpà (Tibet) ...	32	71·72	47	47	6	Biasutti
" " " Limbu (Nepal) ...	50	74·1				Cens. Ind.
" *protomorphus* Khasia (Assam)	81	86·3				" "
" " Bodo "	33	88·0				" "
" " Mande "	34	95·0				" "
" " Mishing " ...	25	84·0				" "
" " Arleng " ...	18	85·1				" "
" " Lissu (Yun-nau) ...	9	85·89				Deliale

„ „ Lolo (Se-chuan)	29	75·9				Legendre
„ „ „ „	6	85·07				Delisle
„ „ Miao-tsè (Ouang-si)	27	88·1				Torii
„ „ Lu-tsé „	10	84·38				Delisle
„ „ Formosans	48	94·3				Torii
„ *meridionalis* Chakma (Rangamati)	100	84·5				Cens. Ind.
„ „ Anamites	93	83·57	2	55	43	Iv. (1911)
Unclassified Groups arranged acc. to rising nas. ind.:						
Dungani	36	56·12(?)	86	11	3	Iv. (1911)
Usbegs	13	69·08	46	39	15	„ „
Japanese	116	72·94	39	51	10	„ „
Loplik (Cashghar)	38	75·76				Joyce
Keria „	16	81·1	—	69	31	Iv. (1911)
Malays from Malacca	12	81·11	8	59	33	„ „
„ South-Perak	37	81·2				Annandale
Igorots (Luzon)	18	99·8(?)	—	6	94	Iv. (1911)

TABLE IV. Stature of the Asiatic Leucoderms.

				Individuals.	Averages.	Percentages.				Authors or previous compilations.
						×-1600	1601-1650	1651-1700	1701-×	
H. indoeuropaeus	*dolichomorphus*	*indo-afghanus*	Balti	81	1617	41	36	13	10	Iv. (1911)
„	„	„	Kafir	18	1668					Joyce
„	„	„	Dardi	45	1631	22	36	24	18	Iv. (1911)
„	„	„	„ Machnopa ...	37	1646	24	22	41	13	Biasutti
„	„	„	Kulu Lahuli ..	27	1610					D. (1900)
„	„	„	Kanet (Kulu) ...	60	1654					Cens. Ind.
„	„	„	„ (Lahul) ...	30	1618					„ „
„	„	„	Rajput	420	1748					„ „
„	„	„	Punjabi ...	444	1684					D. (1900)
„	„	„	Sikh (Punjab) ...	97	1709					„ „
„	„	„	Awan „ ...	33	1706					„ „
„	„	*indo-iranus*	Beluchi (Beluchistan)	60	1662					„ „
„	„	„	„ „	271	1678					Cens. Ind.

„	„	„	Achakzai Pathan „ ...	100	1722					„ „
„	„	„	Pani „ „ ...	100	1677					„ „
„	„	„	Kakar „ „ ...	112	1683					„ „
„	„	„	Tarin „ „ ...	100	1683					„ „
„	„	„	Dewar „ „ ...	200	1642					„ „
„	„	„	Brahui (Beluchistan)...	198	1659					„ „
„	„	*irano-mediterraneus*	Susiani (Persia) ...	11	1633	27	27	19	27	Iv. (1911)
„	„	„	Aderbeijanis „ ...	239	1698					D. (1900)
„	„	„	Persians Hagemi ...	108	1651					„ „
„	„	„	Yesidi (Mesopotamia)	33	1633					Goroschtschveski
„	„	„	Samaritani ...	20	1745	—	5	25	70	Iv. (1911)
„	„	„	Jews from Palestine ...	14	1580	57	21	14	7	„ „
„	„	„	„ (Spanish) from Jerusalem ...	30	1650	17	47	23	13	„ „
„	„	„	Jurnchi (Licha) ...	20	1693	—	5	70	25	„ „
„	*brachimorphus*	*armeno-pamiriensis*	Galoha ...	58	1669	14	24	41	21	„ „
„	„	„	Tajiks ...	448	1689	8	22	18	52	„ „
„	„	„	Wakhi (Cashghar) ...	19	1680					Joyce
„	„	„	Armenians ...	946	1671	12	23	36	29	Iv. (1911)
„	„	„	„ ...	76	1661					Pittard

TABLE IV—*concluded.*

	Individuals.	Averages.	Percentages.				Authors or previous compilations.
			x-1600	1601-1650	1651-1700	1701-x	
H. indoeuropaeus brachimorphus armeno pamiriensis Curds brachycephals …	63	1707					Pittard
,, ,, ,, Lasi (Transcaucasia)	112	1670					,,
,, ,, ,, Aissors (Urmia) …	33	1668					D. (1900)
,, ,, ,, ,, (Tiflis) …	22	1660					Chantre
,, ,, ,, Bektasci (Licha) …	40	1665	12	18	52	18	Iv. (1911)
,, ,, ,, Metuals (Lebanon)…	10	1670					Sénez
,, ,, *georgianus* Grusini … …	903	1652	18	29	44	19	Iv. (1911)
,, ,, ,, ,, … …	1838	1654					D. (1900)
,, ,, ,, Imeri … …	2865	1656					,, ,,
,, ,, ,, Svani … …	142	1658					,, ,,
,, ,, ,, Mingreli … …	1483	1646					,, ,,
,, ,, ,, ,, … …	23	1653	22	22	30	17	Iv. (1911)

Unclassified Groups arranged in the order of stature:

Singhalese	49	1624	43	12	35	10	„ „
Khotan (Cashghar)	19	1645	26	26	21	26	„ „
„ „	67	1655					Joyce
Turks from Asia Minor	138	1670	3	18	48	31	Iv. (1911)
Sarti	238	1677	15	24	38	33	„ „
Curds	143	1680					Chantre
Todas	34	1683	9	18	41	32	Iv. (1911)
„	82	1698					Cens. Ind.
Tats (Transcaucasia)	28	1700					Chantre

TABLE V. Ceph. Ind. of the Asiatic Leucoderms.

		Individuals	Averages	Percentages					Authors or previous compilations
				× -75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34- ×	
H. indoeuropaeus dolichomorphus indo-afghanus	Afghans ...	10	74·81	70	30	—	—	—	Iv. (1911).
" " "	Balti ...	83	74·92	49	34	14	2	1	" "
" " "	Cashmiri ...	20	72·52	80	15	—	—	—	" "
" " "	Kafir ...	18	76·88						Joyce
" " "	Dardi ...	44	76·23	43	27	21	9	—	Iv. (1911)
" " "	Machnopa (Dardi) ...	37	76·79	32	30	30	5	3	Biasutti
" " "	Kulu-Lahuli ...	27	72·38	37	37	26	—	—	Iv. (1911)
" " "	Kanet (Kulu) ...	60	74·3						Cens. Ind.
" " "	" (Lahul) ...	30	77·5						" "
" " "	Rajput ...	420	72·4						" "
" " "	Punjabi ...	444	74·2						D. (1900)
" " "	Sikh ...	80	72·7						" "
" " "	Panditi ...	20	71·88	90	10	—	—	—	Iv. (1911)

,,	,,	,,	Pahari	20	71·29	37	37	26	—	—	,, ,,
,,	,,	*indo-iranus*	Beluchi (Beluchistan)	60	80·0						D. (1900)
,,	,,	,,	,, ,, ...	271	80·4						Cens. Ind.
,,	,,	,,	Achakzai Pathan ,, ...	100	81·4						,, ,,
,,	,,	,,	Pani ,, ,, ..	100	80·1						,, ,,
,,	,,	,,	Kakar ,, ,, ...	112	81·9						,, ,,
,,	,,	,,	Tarin ,, ,, ..	100	82·8						,, ,,
,,	,,	,,	Dewar ,, ,, ...	200	81·7						,, ,,
,,	,,	,,	Brahui ,, ,, ...	198	81·5						,, ,,
,,	,,	*irano-mediterraneus*	Susiani (Persia) ...	11	76·88	46	9	—	27	18	Iv. (1911)
,,	,,	,,	Aderbeijanis ,, ...	208	78·1						D. (1900)
,,	,,	,,	Persians in general ...	168	78·4						,, ,,
,,	,,	,,	Yesidi (Mesopotamia)	33	77·86						Goroschtschveski
,,	,,	,,	Samaritani ...	20	76·2	40	35	10	10	5	Jv. (1911)
,,	,,	,,	Fellachi from Palestine	55	76·25	27	38	24	9	2	,, ,,
,,	,,	,,	Jews ,, ...	14	79·8	7	14	29	36	14	,, ,,
,,	,,	,,	,, (Spanish) from Jerusalem	30	78·2	13	33	27	10	17	,, ,,
,,	,,	,,	Juruchi (Licha) ...	20	78·96	10	25	25	25	15	,, ,,
,,	*brachimorphus*	*armeno-pamiriensis*	Galcha	58	85·69	—	3	9	15	73	,, ,,

Table V—*concluded.*

	Individuals.	Averages.	Percentages					Authors or previous compilations.
			x ·75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34. x	
H. indoeuropaeus brachimorphus armeno-pamiriensis Tajiks ...	440	84·82	1	2	3	29	65	Iv. (1911)
,, ,, ,, Wakhi (Cashghar)	19	84·81						Joyce
,, ,, ,, Armenians ...	826	86·55	—	—	2	17	81	Iv. (1911)
,, ,, ,, ,, ...	124	85·69						Pittard
,, ,, ,, Curds brachycephals ...	63	86·49						,,
,, ,, ,, Lasi (Transcaucasia) ...	151	85·61						,,
,, ,, ,, ,, ,, ...	27	87·48						Chantre
,, ,, ,, Aissors (Urmia) ...	33	88·7						D. (1900)
,, ,, ,, ,, (Tiflis) ...	22	89·5						Chantre
,, ,, ,, Bektasci (Licha) ...	40	86·69	—	—	—	—	100	Iv. (1911)
,, ,, ,, Metuals (Lebanon) ...	10	84·06						Sénez
,, ,, ,, Ansaris (Antioch) ...	39	84·1	—	3	13	26	58	Iv. (1911)
,, ,, ,, ,, ...	15	85·0						v. Luschan

„ „ „ Maronites (Syria)	20	86·0						
„ „ „ „ „	29	87·13						Sénez
„ „ „ Kyzilbash (Mesopotamia northern).	189	86·0						v. Luschan
„ „ *georgianus* Grusini	789	84·23	—	4	11	26	59	Iv. (1911)
„ „ „ Svani	19	83·8						D. (1900)
„ „ „ Mingreli	54	82·5	7	7	19	22	45	Iv. (1911)
Unclassified Groups arranged according to rising cephalic index :								
Toda	115	73·25	75	21	3	1	—	„ „
Curds	221	75·0						v. Luschan
Turkomans transcasp.	23	77·9						D. (1900)
Curds (62 ♀)	332	78·53						„ „
Singhalese	142	78·8						„ „
Tats (Transcaucasia)	28	79·0						Chantre
Turks from Asia Minor	187	81·0						v. Luschan
Parsis	20	82·35	—	5	25	25	45	Iv. (1911)
Sarti	223	83·6	5	11	11	27	46	„ „
Khotan (Cashghar)	67	84·21						Joyce
„ „	22	84·4	—	5	9	27	59	Iv. (1911)
Turks from Asia Minor	137	84·4	5	14	12	20	49	„ „

TABLE VI. Nasal Index of the Asiatic Leucoderms.

	Individuals.	Averages.	Percentages.			Authors or previous compilations.
			× -70·00	70·01-85·00	85·1-×	
H. indoeuropaeus dolichomorphus indo-afghanus Balti	81	68·2	59	32	9	Iv. (1911)
" " " Kafir	18	72·06				Joyce
" " " Dardi	42	64·38	74	26	—	Iv. (1911)
" " " Machnopa (Dardi) ...	37	71·57	43	51	6	Biasutti
" " " Kanet (Kulu) ...	27	74·1				Cens. Ind.
" " " " (Lahul) ...	30	66·4				" "
" " " Rajput	420	71·6				" "
" " " Punjabi	444	70·2				D. (1900)
" " " Sikh	80	68·8				" "
" " *indo-iranus* Beluchi (Beluchistan) ...	60	69·4				" "
" " " " "	271	72·5				Cens. Ind.
" " " Achakzai Pathan "	100	68·3				" "
" " " Pani " "	100	73·0				" "

”	”	”	Kakar ” ”	112	69·6				
”	”	”	Tarin ” ”	100	67·8				” ”
”	”	”	Dewar ”	200	74·3				” ”
”	”	”	Brahui ”	198	70·9				” ”
”	”	*irano-mediterraneus*	Susiani (Persia) ...	10	73·25	40	50	10	” ”
”	”	”	Aderbeijanis ” ...	112	64·81				Iv. (1911)
”	”	”	Yesidi (Mesopotamia)	33	61·59				Chantro
”	”	”	Samaritani ...	20	59·6	90	10	—	Goroschtschveski
”	”	”	Fellachi from Palestine	55	63·37	89	11	—	Iv. (1911)
”	”	”	Jews ”	14	61·1	100	—	—	” ”
”	*brachimorphus*	*armeno-pamiriensis*	Galcha	27	66·8				” ”
”	”	”	Wakhi (Cashghar) ...	19	71·32				D. (1900)
”	”	”	Armenians ..	724	62·55	78	20	2	Joyce
”	”	”	”	125	66·06				Iv. (1911)
”	”	”	Curds brachycephals ...	63	68·94				Pittard
”	”	”	Lasi (Transcaucasia) ...	152	67·88				”
”	”	”	” ”	27	64·45				”
”	”	”	Aissors (Tiflis) ...	22	67·3				Chantro
”	”	”	Metuals (Lebanon) ...	10	64·23				”
”	”	”	Ansaris (Antioch) ...	39	72·0	41	51	8	Sénez
									Iv. (1911)

TABLE VI—*concluded.*

	Individuals.	Averages.	Percentages.			Authors or previous compilations.
			× -70·00	70·01-85·00	85·01- ×	
H. indoeuropaeus brachimorphus georgianus Grusini	766	57·58	95	5	—	Iv. (1911)
„ „ „ „	49	64·5				D. (1900)
„ „ „ Imeri	62	60·8				„ „
„ „ „ Mingreli	45	62·96	71	29	—	Iv. (1911)
Unclassified Groups arrang. acc. to rising nas. ind.						
Curds (62 ♀)	332	66·03				Chantre
„	15	64·44	73	27	—	Iv. (1911)
Tats	32	67.30				Chantre
Turks from Asia Minor	120	70·00				„
Khotan (Cashghar)	67	74·7				Joyce
Singhalese	29	74·9				D. (1900)
„	10	75·84	40	40	20	Iv. (1911)
Todas	22	76·0	36	59	5	„ „
„	82	74·9				Cens. Ind.

Table VII. Stature of the Indonesians and allied peoples.

	Individuals.	Averages.	Percentages.				Authors or previous compilations
			x-1600	1601-1650	1651-1700	1701-x	
H. indonesiacus Indonesians	38	1500	76	11	8	5	Iv. (1911)
„ Ulu-ayar (Borneo)	19	1571	74	16	10	—	„ „
„ Dayaks „	42	1577					Haddon
„ Baravan „	12	1540					„
„ Malang „	16	1535					„
„ Lerong „	10	1520					„
„ Tengerreses (Java)	162	1607	48	28	16	8	Iv. (1911)
„ Orang-Kubu (Sumatra)	37	1587	62	27	11	—	„ „
„ Battas „	43	1603	44	35	19	2	„ „
„ Niasseses	1295	1547					Kleiweg de Zwaan
„ Enganeses	—	1570					„ „
„ *brachimorphus* Javanese	182	1628	49	32	12	7	Iv. (1911)
„ „ Sondaneses from Java	209	1594	57	30	12	1	„ „

TABLE VII—*concluded.*

	Individuals.	Averages.	Percentages.				Authors or previous compilations.
			×-1600	1601-1650	1651-1700	1701-×	
H. indonesiacus brachimorphus Iban (Borneo) … …	52	1591					Haddon
,, ,, Sibujan ,, … …	14	1543					,,
,, ,, Bughi (Celebes) … …	15	1601	41	33	13	13	Iv. (1911)
,, ,, Macassars ,, … …	14	1618	33	33	33	—	,, ,,
,, ,, Baveanes … … …	14	1615	43	29	21	7	,, ,,
,, ,, ,, … … …	125	1587					D. (1900)
,, ,, Madureses … … …	13	1606	54	23	15	8	Iv. (1911)
Unclassified Groups (much mixed up):							
Malays (principally from Sumatra) … … …	915	1550	79	14	6	1	,, ,,
Kajan (Borneo) … … … …	34	1584	61	24	9	6	,, ,,
,, ,, … … … …	21	1550					Haddon
Punan ,, … … … …	13	1580	70	8	22	—	Iv. (1911)
,, ,, … … … …	19	1550					Haddon

Keniah „	26	1608					,,
Toragia (Celebes)	25	1573	64	28	8	—	Iv. (1911)
Gorontalo „	20	1584					Lubbers
Cambodians Kmer	11	1623	27	55	18	—	Iv. (1911)
„ „	117	1648					D. (1903)
„ Moi	359	1583					„ „

TABLE VIII. Ceph. Ind. of the Indonesians and allied peoples.

		Individuals.	Averages.	Percentages.					Authors or former compilations.
				x-75·00	75·01-77·77	77·78-80·00	80·01-83·33	83·34-x	
H. indonesiacus	Indonesians	37	81·51	3	21	22	27	27	Iv. (1911)
"	Ulu-ayar (Borneo)	31	75·5	57	23	10	10	—	" "
"	Dayaks "	42	78·4						Haddon
"	Baravan "	12	77·8						"
"	Malang "	16	76·9						"
"	Lerong "	10	78·5						"
"	Tengerreses (Java)	130	79·71	3	22	29	36	10	Iv. (1911)
"	Orang-Knbu (Sumatra)	31	79·98	3	29	19	32	17	" "
"	Battas "	43	80·91	5	21	23	23	28	" "
"	Acheneses "	20	80·5						D. (1900)
"	Sumbaneses	45	79·1						Ten Kate
"	Mentavei	19	79·97	5	16	31	37	11	Iv. (1911)
"	Niasseses	1297	80·72						Kleiweg de Zwaan
"	*brachimorphus* Javanese	812	84·27	1	4	9	31	55	Iv. (1911)

„ „ Sondaneses from Java	24	86·02	—	—	8	25	67	„ „
„ „ Iban (Borneo)	52	83·0						Haddon
„ „ Sibujan „	14	83·1						„
„ „ Boghi (Celebes)	15	84·93	—	13	7	33	47	Iv. (1911)
„ „ Macassars „	14	84·97	7	—	21	22	50	„ „
„ „ Bavcanes	14	83·72	—	—	7	43	50	„ „
„ „ Madureses (*pro parte !*)	13	82·08	8	15	8	38	31	„ „
Unclassified Groups (much mixed up):								
Malays (principally from Sumatra)	1014	81·81	5	12	16	32	35	„ „
Kajan (Borneo)	48	82·0	2	15	21	33	29	„ „
„ „	21	79·8						Haddon
Punan „	14	82·0	2	15	21	33	29	Iv. (1911)
„ „	19	80·9						Haddon
Keniah „	26	79·9						„
Toragia (Celebes)	14	82·1	14	7	14	14	50	Iv. (1911)
Gorontalo „	...	82·7						Lubbers
Cambodians Kmer	42	83·05	—	5	14	60	21	Iv. (1911)
„ Kni	20	82·0						D. (1900)
„ Moi	360	77·5						„ „

TABLE IX. Nas. Ind. of the Indonesians and allied peoples.

	Individuals.	Averages.	Percentages.			Authors or previous compilations
			× -70·00	70·01-75·00	75·01- ×	
H. indonesiacus Indonesians	38	88·17	3	37	66	Iv. (1911)
,, Ulu-ayar (Borneo)	31	90·3	—	19	81	,, ,,
,, Dayaks ,, ...	42	86·3				Haddon
,, Baravan ,, ...	12	89·1				,,
,, Malang ,, ...	16	88·2				,,
,, Lerong ,, ...	10	86·5				,,
,, Tengerreses (Java)	130	100·41	—	8	92	Iv. (1911)
,, Orang-Kubu (Sumatra)	31	90·17	3	16	81	,, ,,
,, Sumbaneses	45	81·0				Ten Kate
,, Mentavei	19	92·24	—	42	58	Iv. (1911)
,, Niasseses	1294	77·28	13	70	17	Kleiweg de Zwaan
,, *brachimorphus* Javanese	82	83·75	4	46	50	Iv. (1911)
,, ,, Sondaneses from Java	24	87·74	—	42	58	,, ,,

„ „	Iban (Borneo)	53	92·6				Haddon
„ „	Sibujan	14	81·8				„
„ „	Bughi (Celebes)	15	88·37	—	44	56	Iv. (1911)
„ „	Macassars	14	84·26	—	64	36	„ „
„	Baveanes	14	83·04	14	43	43	„ „
„ „	Madureses	13	75·23	23	62	58	„ „
Unclassified Groups (much mixed up):							
Malays (principally from Sumatra)		657	77·11	26	62	18	„ „
Kajan (Borneo)		48	84·1	2	54	44	„ „
„ „		21	91·6				Haddon
Punan „		14	83·0	—	64	36	Iv. (1911)
„ „		19	88·1				Haddon
Keniah „		26	92·7				„
Cambodians Kmer		11	86·0	—	64	36	Iv. (1911)

Table X. Stature of the Australoids, Negroids, etc.

	Individuals.	Averages.	Percentages.				Authors or previous compilations.
			× -1600	1601-1650	1651-1700	1701- ×	
H. australis veddaicus Veddahs	88	1571	71	22	7	—	Iv. (1911)
,, ,, Munda	100	1589	61	26	10	3	,, ,,
,, ,, *senoicus* Senoi (Malacca)	33	1520	97	3	—	—	,, ,,
,, ,, ,, ,, Batang Padana	30	1549	90	10	—	—	,, ,,
,, ,, ,, Sakais from Sumatra	19	1562	68	27	5	—	,, ,,
,, ,, ,, ,, Mai Darat	34	1524	91	9	—	—	,, ,,
,, ,, *toala* Toala (Celebes)	25	1573	64	28	8	—	,, ,,
H. pygmaeus asiaticus Semangs (Malacca)	17	1507					Annandale
,, ,, Sakais (black) from Malacca	28	1490					D. (1900)
,, ,, Orang Akett (Sumatra)	9	1502	89	—	11	—	Iv. (1911)
,, ,, *andamanicus* Andamans	42	1493	98	2	—	—	,, ,,
,, ,, ,, ,,	115	1485					D. (1900)
,, ,, *philippinensis* Aeta	91	1461	100	—	—	—	Iv. (1911)
H. indoafricanus dravidicus Tamils	86	1636	29	31	27	13	,, ,,
,, ,, Hindus (principally Dravidians)	6423	1623	37	27	24	12	,, ,,
H. oceanicus (?) *ainu* Ainu	70	1581	74	20	6	—	,, ,,
,, ,, ,,	91	1567	...	...	...	...	Koganei

Table XI. Ceph. Ind. of the Australoids, Negroids, etc.

	Individuals.	Averages.	Percentages.					Authors or previous compilations.
			× ·75·00	75·02-77·77	77·78-80·00	80·01-83·33	83·34- ×	
H. australis veddaicus Veddahs	55	75·1						D. (1900)
,, ,, Munda	100	74·5	61	26	12	1	—	Iv. (1911)
,, ,, *senoicus* Senoi (Malacca)	33	78·69	18	34	18	15	15	,, ,,
,, ,, ,, Sakais from Sumatra	19	75·45	37	37	26	—	—	,, ,,
,, ,, ,, ,, (white) from Malacca ...	68	78·7						D. (1900)
,, ,, ,, ,, Mai Darat	34	78·3						Annandale
,, ,, *toala* Toala (Celobes)	23	82·2	—	17	9	35	39	Iv. (1911)
H. pygmaeus asiaticus Semaogs (Malacca)	20	77·7						Annandale
,, ,, Sakais (black)	28	79·0						D. (1900)
,, ,, Orang Akett (Sumatra)	9	83·65	—	—	11	55	34	Iv. (1911)
,, ,, *andamanicus* Andamans	11	82·90	—	—	—	64	36	,, ,,
,, ,, *philippinensis* Aeta	34	83·49	—	3	26	27	44	,, ,,
H. indoafricanus dravidicus Tamils	149	75·66	39	30	14	14	3	,, ,,
,, ,, Hindus (principally Dravidians) ...	6528	75·2	47	24	12	9	8	,, ,,
H. oceanicus (?) *ainu* Ainn	70	76·5	24	40	32	4	—	,, ,,
,, ,, ,, ...	95	77·3						Koganei

Table XII. Nas. Ind. of the Australoids, Negroids, etc.

	Individuals.	Averages.	Percentages.			Authors or previous compilations.
			×.70·00	70·01-75·00	75·01-×	
H. australis veddaicus Veddahs	8	84·18				Deschamps
,, ,, Munda	100	89·9	—	22	78	Iv. (1911)
,, ,, *senoicus* Senoi	33	85·58	—	42	58	,, ,,
,, ,, ,, ,, Mai Darat	33	91·9				Annandale
H pygmaeus asiaticus Semangs (Malacca)	20	97·1				,,
,, ,, *philippinensis* Aeta	63	101·9	—	6	94	Iv. (1911)
H indoafricanus dravidicus Tamils	43	76·67	12	76	12	,, ,,
,, ,, Hindus (principally Dravidians)	5904	82·37	14	70	16	,, ,,
H oceanicus (?) *ainu* Ainu	79	68·0(?)				Koganei

SUPPLEMENTARY BIBLIOGRAPHY.

(The authors referred to are those cited in the tables, omitting those used by Deniker and Ivanovsky who appear there abbreviated respectively as D. and Iv.)

ANNANDALE (N.) or Robinson (H.C.), *Fasciculi Malayenses. Anthropology*. Liverpool, 1903.—The data about the Malays of South Perak, the Mai Darat Senoi and the Semangs are given by individuals in three tables and by averages in two other tables of fasc. I: they have not been made use of by Iv., except the stature of the Mai Darat Senoi and of only 12 Semangs. Martin also makes little use of them.

BEAN (R. Bennett), *The Benguet Igorots* "Philipp. Journ. Sc.," Section A, Vol. III, 1908. Data about 104 Igorots of Luzon.

—*Filipino Types: found in Malecon Morgue.* Ibid, IV, 1909, No. 4. Data about 10 living Japanese.

—*Filipino Types: Racial Anatomy in Taytay. The Men.* Ibid, IV, 1909, No. 5. Data about 183 Taytays of Luzon.

BIASUTTI (R.). The averages here published (kindly communicated by Biasutti) refer to the unpublished measurements taken by Dainelli in Cashghar.

CHANTRE (E.), *Recherches anthropologiques sur le Caucase.* T. IV, *Populations actuelles*, Paris-Lyon, 1887. Pp. 272-273 for the ceph. index and nasal index of 27 Lases and many other Caucasians: the stature is missing.

—*Recherches anthropologiques dans l'Asie occidentale. Missions scientifiques en Transcaucasie, Asie Mineure et Syrie 1890 1894.* "Arch. Mus. Hist. Nat. Lyon," T. VI, Lyon, 1895. Pages 244-245 for the cephalic and nasal indices and the stature of 130 (18 ♀) Aderbeijanis, 332 (62 ♀) Curds, 32 (4 ♀) Tats, 10 Metuals, 120 (13 ♀) Turks, 341 (44 ♀) Armenians and 27 (5 ♀)

Aissors; and for the ceph. and nas. indices of 48 (6 ♀) Ansaris of whom the stature is not given. The author gives also many tables with individual data which have been used by Iv. to settle the various percentages that are referred to in our Tables IV, V and VI.

Czaplicka data (M.A.), unpublished data kindly communicated.

Delisle (E.), *Sur les caracteres physiques des populations du Tibet Sud-Oriental.* "Bull. et. Mém. Soc. Anthrop." Paris, 1908. Data about 11 Eastern Tibetans, 10 Lutsés, 9 Lissus, 7 Mossos and 6 Lolos.

Deschamps (E.), *Au pays des Veddas.* Paris, 1892. Data relating to 16 Singhalese and 8 Veddahs.

Gaupp (H.), *Forläufiger Bericht über anthropologischen Untersuchungen an Chinesen und Mandschuren in Peking.* "Zeitsch. f. Ethnol.," 1909. It gives the stature of 38 Chinese and 5 Manchus: the average of these last is 171 cm.

Goroschtschevski. See Ivanovskij (A.A.), *Die Jesiden* (in Russian reviewed in "Arch. f. Anthrop.," N. F. IV, 1902, p. 503).

Haddon (A. C.), *The physical characters of the races and peoples of Borneo,* in "Hose (Ch.) and McDougal (W.), *The Pagan Tribes of Borneo,*" London, 1912, Vol. II, Appendix. Many data: absent almost completely from the tables of Martin, *Lehrbuch.*

Hilden (K.). Quoted in the text.

Jijma. Quoted by Martin, *Lehrbuch.*

Joyce. Quoted in the text.

Kate (H. Ten), *Mélanges anthropologiques,* "L'Anthrop.," XXVI, 1915. Data about the Sumbaneses.

Kleiweg de Zwaan (J.P.), *Anthropologische Untersuchungen über die Niasser,* Haag, 1914. It refers also to the stature of the Enganeses, but does not indicate the number of individuals.

Koganei (Y), *Messungen an chinesischen Soldaten.* "Mittheil. medic. Fakultät Univ. Tokyo." T. VI, 2, 1903. It relates to 942 soldiers made prisoners in the Chino-Japanese war of 1894-1895.

— *Beiträge zur physischen Anthropologie der Aino. II. Untersuchungen am Lebenden.* Tokio, 1894. The nasal index does not appear to be likely.

Legendre (A.), *Etudes anthropologiques sur les Chinois de Setchouen.* "Bull, et Mém. Soc. Anthrop." Paris, 1910, p. 158. Only the stature of 100 western Chinese : absent the ceph. ind. and nas. ind. which are given in our tables from those of **Martin**, *Lehrbuch* (perhaps noted to Martin from other sources).

— *Les Lolos.* Ibid., p. 77. Data about 19 Lolos.

— *Far-West Chinois. Aborigènes : Lolos.* Ibid., p. 520. Data about 10 other Lolos.

Lubbers. Quoted by **Kleiweg de Zwaan** for the Gorontalo of Celebes.

Luschan (F. von). Referred to by **Chantre** (1895) for the Ansaris.

Lutzenko (E. I.), Cited by Hilden : he at p. 73 remarks that the nas. ind. of 69.01 obtained by Lutzenko is lower by 6.5 units than that he obtained himself, which may be explained if we suppose that Lutzenko took as the nas. height the ofrion-subnasal distance. One ought to ascertain whether the very low nas. ind. which one finds, according to Russian authors, in Transcaucasia were taken by using the ofrion instead of the nasion.

Mainoff (J.J.)—Quoted by **Martin**, *Lehrbuch* (p. 215) for the Tunguses : stature 1627. The figure 1631 which has been quoted by **Mrs. Jochelson-Brodsky** ("Arch. f. Anthrop," N.F., V, 1906, p. 7) is preferable; she must have had access to the original source or to other Russian works. For the Yacuts see the review.

J. J. MAINOFF, *Die Jakuten* (in Russian), "Arch. f. Anthrop." N. F. II, 1904; at p. 218 it says that in the year 1894-1895 Hecker measured 237 Yacuts of whom 30 are cross-breeds; leaving these aside, the stature comes to 162·44. These data are commonly attributed to Mainoff who availed of the investigations of Hecker. The same may be said of the ceph. ind. of 207 Yacuts. The nasal index is missing.

PITTARD (E.). Quoted in the text.

POROTOFF. Referred to by Martin, *Lehrbuch* (p. 448), for the nasal index of the Buriats.

RUDENKO (S.). *Résultats de mensurations anthropologiques sur les peuplades du Nord-Ouest de la Sibérie* "Bull. et Mém. Soc. Anthrop." Paris, 1914, p. 123. The author has taken a number of measurements (of 54 Samoyeds, 126 Ostyaks and 75 Voguls), including the height of the cranium which appears to be very little developed

SÉNEZ. Referred to by CHANTRE (1895) for 10 Metuals.

SINELNIKOV (N. A.). Referred to by RUDENKO (pp. 139, 143). It does not state the number of individuals measured.

TORII (R.), *Bericht über die untersuchungen der Miao-tsé* Tokio, 1907 (in Japanese review in "Zentralblatt f. Anthrop.," 1911, p. 147).—*Etudes Anthropologiques Les Mandchoux* "Journ. Coll. Science Imp.-University of Tokyo" Vol. XXXVI, art. 6, Dec. 30, 1914.

Notes on Indian Astronomy

BY

DHIRENDRA NATH MOOKERJEE, B.Sc.

I

THE LIBRATION OF EQUINOXES

In the Suryya Siddhanta and other Hindu Astronomical works, we find the theory of the Libration of Equinoxes in which it is stated that the first point of Aries moves along the Ecliptic twenty-seven degrees on each side of the Nirayana Vindu, the fixed initial point. That is, in a certain number of years it goes twenty seven degrees away from the Initial point, then returns-to it, again goes twenty-seven degrees the other side and comes back to the Initial point in a certain number of years.

The following extract from Brennand's Hindu Astronomy will show the universal acceptance of the theory of the Libration of Equinoxes and the Solstices by the Hindu astronomers. "This was a doctrine of a Libration of the Equinoctial and Solstitial-points. Colebrooke in his essay on the equinoxes, has given the views of a number of writers on the subject; by some the motion is considered to be an entire revolution, through the whole of the asterisms; by others, and those the most numerous it was a libration, between certain limits on each side of a fixed point:.........In these two statements it may be noticed that Bhascara supposes the Equinoctial point is in motion, whereas the Suryya Siddhanta assumes that the entire circle of the Asterisms oscillates, first 27° on each side of a mean point and then 27 degrees on the other side of that point. This supposed motion of the whole of the constellations may have led Bentley to assume that the ancient astronomers had two systems of Lunar Asterisms.........The theory of a libration, as expressed in various astronomical works, has been shown by Colebrooke to have been generally prevalent from very early times. It was also a doctrine maintained by Aryabhatta and Parasara, and by most of the Hindu astronomers of later times" (pp. 77-79). But this theory has been refuted by modern European astronomers[1] as will be seen from the following quotation from Lokmanya B. G. Tilak's Orion, page 82. "The hypothesis is now given up by modern astronomers as mathematically incorrect; but no reason has yet been assigned why it found place in the Hindu astronomy. A theory may be erroneous but even an erroneous theory cannot become prevalent without a good cause. It has been suggested by Bentley and approved by Prof. Whitney, that the limits of the libration might have been determined by the fact that the earliest recorded Hindu year had been made to begin when the sun entered the asterism of Krittika or 26° 40′ in front of Revati. But this alone is not enough to suggest the theory of libration. For, unless the Hindu astronomer had grounds—to him conclusive and otherwise inexplicable—for holding that the vernal equinox fell 27° on each side of Revati, he would not have proposed the libration of the equinoxes. So far as I know no such grounds have yet been discovered by modern scholars....." In this paper an attempt has been made to mathematically establish the conclusive grounds on which the Hindu astronomers based their theory of libration of Equinoxes.

---

[1] *Vide* also Burgess's translation of the Suryya Siddhanta, pp. 244 to 249.

Now looking at the curve of the Equation of Time herewith appended, we find that the Equation of Time is influenced by two factors—the Obliquity of the Ecliptic and the Eccentricity. The curve for the Equation of Time due to the Obliquity and that due to the Eccentricity are drawn separately. Let us start for convenience from the time when the Aphelion coincided with the first point of Aries (which happened about 4000 B. C.)[1] and let us also assume that the Eccentricity and the Obliquity do not vary during one complete revolution. At this time the Equation of Time is zero at the vernal equinoctial point. As years pass on the aphelion goes ahead of the first point of Aries at the rate of 62 seconds (50·2″ for precession and 11·8″ for the movement of the apsides) annually. Now looking at the curves we find that the maximum equation of time is $\pm 7\frac{3}{4}$ minutes due to the Eccentricity and this is attained about 90 degrees after the Perihelion or the Aphelion point (more correctly 88° 50′ after the Perihelion point). The corresponding degree in the curve for the obliquity at which the equation is $\pm 7\frac{3}{4}$ minutes is 27 degrees about, on either side of the Equinoctial or the Solstitial points.

This may also be seen from the following solution :—

The maximum Equation of Time due to Eccentricity being 7·68 minutes (1° 55′) and that due to Obliquity being 9·9 minutes (2° 28′), the mean Longitude of the point at which the Equation of Time is 7·68 min., on the curve for the Obliquity will be given by solving the following :

In a spherical right-angled triangle in which the hypotenuse is L, the mean longitude (26° 30′). the angle adjacent is Ω, the Obliquity of the ecliptic (23° 27′)

---

[1] The earth being in aphelion on the vernal equinoctial day about 4000 B.C., graphically, first point of Aries and aphelion coincided then.

and the base is the R. A. (right ascension) to be found, we have

$$\text{Tan R. A.} = \frac{\text{R} \cos \Omega}{\cot \text{L}}, \ (\text{R}=\text{radius}).$$

$$= \frac{\text{R} \cos 23°27'}{\cot 26°30'}$$

$$\text{R}=10.$$

$$\cos 23° 27' = 9{\cdot}9626$$

$$\cot 26° 30' = 10{\cdot}3023$$

$$\text{Tan R. A.} = 9{\cdot}6603$$

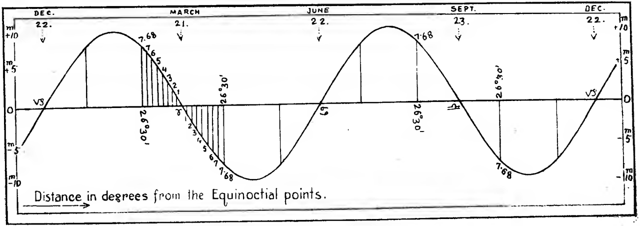
$$\text{R. A.} = 24° 35'$$

∴ Equation of time due to Obliquity = L − R. A. = 26° 30′ − 24° 35′ = 1° 55′ (7·68 min.).

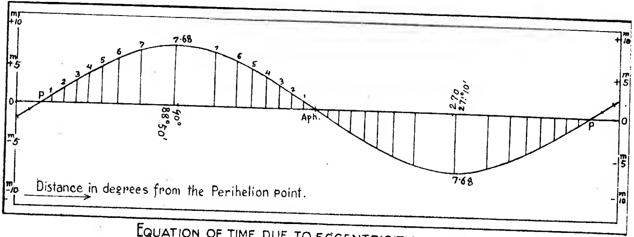
∴ the mean longitude of the point at which the equation of time is 7·68 min. on the curve for the Obliquity is 26° 30′.

So the point near Aries at which the Equation of Time is zero oscillates about 27 degrees on either side of it.

Therefore when the Aphelion has advanced (90 plus 27) or 117 degrees from the first of Aries the longitude of the Sun on the day at which the Equation of Time is zero, is 27 degrees. This to occur, we have to shift the curve for the Eccentricity about 120 degrees keeping the curve for the Obliquity fixed. When the Aphelion will be advancing still further the Equation of Time will be zero—on dates earlier until the perihelion coincides with the first of Aries, at which time the Equation is zero at the vernal equinoctial day. This to take place the Eccentricity curve has to be shifted 60 degrees more. Let the aphelion advance 60 degrees further. The Equation is zero again at a point 27 degrees on the other side of the first of Aries after which time it is zero on earlier days and the aphelion advancing 120 degrees more coincides again with the first of Aries, when the equation is zero.



EQUATION OF TIME DUE TO OBLIQUITY OF ECLIPTIC.



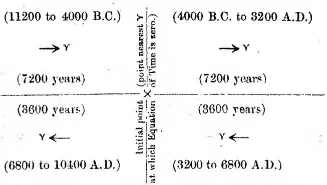
EQUATION OF TIME DUE TO ECCENTRICITY.

Now assuming the point near Aries at which the **Equation** of Time is zero as the fixed Initial point it will be seen very clearly that the first point of Aries moves 27 degrees on one side or the other of this Initial point. This solution may similarly be extended to the other Equinoctial or the Solstitial points.[1]

The periods of the above oscillations are the following :—

1st period (120 degrees movement) $= \frac{120^\circ}{60''} = 7200$ years.
2nd ,, (60 ,, ,,) $= \frac{60^\circ}{60''} = 3600$,,
3rd ,, (60 ,, ,,) $= \frac{60^\circ}{60''} = 3600$,,
4th ,, (120 ,, ,,) $= \frac{120^\circ}{60''} = 7200$,,

Total 21600 years. Double this amount equals 43200 years. The reason for the adoption of the period of a Yuga as 432 and so many zeros is now apparent. The oscillatory period of 108 degrees is 21600 years (about 20·86 according to modern European Astronomy). Therefore in a Yuga of 4320000 years there are 200 complete revolutions. The period of 21600 years may be divided into three periods of 7200, 7200 and 7200 (3600 plus 3600) years. Each of these periods is the 600th part of a Yuga.



---

[1] The maximum Libration of Solstices is 24° 30′. This explains Aryabhatta's limit of the Libration of Solstices (Ayana) as 24 degrees.

This is the reason why Ranganath the great astronomer commentator of the Suryya Siddhanta mentions this revolution as *bilakshana*, possessed of peculiar characteristics.

It is clear, the Hindus carried their observation assiduously at least from 12000 B.C. to about 3500 B.C. to expound the Libration of Equinoxes in which case the Hindu civilization is at least 14000 years old.

Now to find the Ayanamsa. When the R A. of the Sun is 120 degrees his longitude is about 117 degrees. When the distance between the Nirayana Vindu and aphelion is 90 degrees, the distance between the first of Aries and the Nirayana point is 27 degrees; this is the Ayanamsa then. In other words the difference between the longitude of the sun on the day on which the equation is zero nearest the vernal Equinox, and that of the vernal Equinox is the Ayanamsa for a particular year. Taking the case of the present time the difference between the longitude of the sun on the 14th of April and when the earth is in aphelion on July 2nd (which is the *bhuja*), about 77 degrees, the Ayanamsa should be $\frac{77 \times 27}{90} = 23$ degrees about. This is the same as the longitude of the Sun on the 14th of April at which date the equation is zero.

We also observe that when the mean time is less than the apparent time on the vernal equinoctial day, the first point of Aries is to be looked for to the east of the Initial point (the point nearest Aries at which equation of time is zero). This was the case from about 13000 to 4000 B.C. When mean time is greater than the apparent on the vernal equinoctial day, the first point of Aries is towards the west of the Initial point, as it is at present. This is what verse 11 and 12—Chap. III, Suryya Siddhanta—really mean.

This is in brief the explanation of the Libration of Equinoxes as expounded by the ancient Hindu

Astronomers. The Hindu Nirayana year is neither Sidereal nor Tropical. It is a new thing altogether. This is an addition to one of the clearest arguments of the independent origin of Indian Astronomy.

Taking the first day of the Hindu Nirayana year to indicate the day when the Equation of Time is zero nearest the Vernal Equinox (about April 15th now) it is clear that Vernal Equinox cannot happen earlier or later by 27 days, in a cycle of about 21600 years.

If now the study of Hindu Astronomy and chronological events be conducted in the light of the above explanation, I am confident all anomalies and seeming absurdities will disappear to the great joy of the astronomers.

With great diffidence, being a young student of astronomy,—I place these few lines before the mathematicians and astronomers—with the hope that they will examine the above statements and see if the Libration Theory of the Hindus has been correctly solved.

In conclusion, I acknowledge my gratefulness to Asutosh Mittra, Esq., Professor, Vidyasagar College, from whom I got valuable help in understanding difficult portions of the Suryya Siddhanta, but for whose help this explanation might not have struck my imagination.

Addendum (to paper on Libration of Equinoxes).

Burgess in his translation of the Suryya Siddhanta (Journal of the American Oriental Society, Vol. VI) pages 244 to 249, discussed the theory of Libration of Equinoxes expounded by the ancient Hindu astronomers. Here I quote a few lines from his remarks :—

" ... .Now it is not a little difficult to suppose that a phenomenon of so much consequence as this, which enters as an element into so many astronomical processes should.........have been hidden away thus in a pair of verses............" p. 246.

"..........Besides these considerations drawn from the general history of Hindu astronomy, and the position of the element of the precession in the Suryya Siddhanta we have still to urge the blind and incoherent, as well as unusual form of statement of the phenomenon, as fully exposed above.........." p. 247.

".........Bhaskara's own commentators.........hold to that of a libration, which has been and is altogether the prevailing doctrine throughout India and seems to have made its way thence into the Arabian and even into the early European astronomy (see Colebrooke, as above)." What Bhaskara mentions in his Siddhanta Siromani (Goladhyaya-Golabandhadhikara-slokas 17 and 18) as 'Ayana Chalanam' (movement of the first point of Aries or Libra) and the period of revolution is clear from his own notes on the same. This is nothing but the movement of a fixed equinox with reference to the aphelion. The period of a complete revolution of the perihelion or the aphelion with reference to a fixed equinox is according to modern astronomy 20986 years (annual movement 61·9″ seconds). This according to Bhaskara is 21636 years (annual movement 59·9″ seconds). This is the same as the period of one complete libratory movement.

Now I shall make it clear that the Greeks also adopted the same sort of year calculation as the Hindus. Young in his "Manual of Astronomy," page 144, says, "He (Hipparchus) found that the year of the seasons, from solstice to solstice, as determined by the Gnomon, was shorter than that determined by the heliacal rising and setting of the stars (*i.e.*, the times when certain constellation rise and set with the sun), just as if the Equinox preceded, *i.e.*, 'stepped forward' a little to meet the sun." Regarding the amount of precession determined by

Hipparchus, Burgess says, "Among the Greek astronomers Hipparchus is regarded as the first who discovered the precession of Equinoxes; their rate of motion, however, seems not to have been confidently determined by him, although he pronounces it to be at any rate not less than 36″ yearly."

"………Ptolemy however was so unfortunate as to adopt for the true rate Hipparchus's minimum of 36″ a year … .." p. 249. Now in the explanation of the Libration of Equinoxes, I have shown that in about 7200 years (from B.C. 4000 and onwards) the maximum libration of about 27° will be attained (please see the last diagram in the paper). Now assuming the Sun's daily motion to be 1°, we see that in 7200 tropical years and 27 days, 7200 Nirayana years are completed. Therefore one Nirayana year is $\frac{27}{7200}$ day or 0·00375 day longer (under the present conditions) than the tropical year. Therefore the present Nirayana year is equal to (365·24219+·00375) days or 365·24594 days. The difference between the Sidereal and tropical year being 0·01417 day, during this time 50·1″ seconds of arc of the ecliptic are passed over. The difference between the Nirayana year (for the present) and the Sidereal year being 0·01042 d., the number of seconds of arc passed over during this time is got by simple proportion :

$$0{\cdot}01417\text{ d} : 0{\cdot}01042\text{ d} :: 50{\cdot}1'' : x''$$

$$\therefore\quad x = \frac{{\cdot}01042 \times 50{\cdot}1}{{\cdot}01417} \text{ or } 36{\cdot}8''.$$

This is the amount of precession determined by Hipparchus and Ptolemy. Therefore they certainly used this year which began on the day when the mean time and Sun dial time were the same nearest the Vernal Equinox. This to be true the length of the year calculated by Hipparchus and Ptolemy ought to be about 0·00375 d. or 5·34 minutes longer than the tropical year[1] and I find this is to be exactly the case, "Professor Newcomb who has compiled an instructive table of the Equinoxes severally observed by Hipparchus and Ptolemy, with their errors deduced from Leverrier's Solar Tables, finds palpable evidence that the discrepancies between the two series were artificially reconciled on the basis of a year 6 minutes too long, adopted by Ptolemy on trust from his predecessors. He nevertheless holds the process to have been one that implied no fraudulent intentions."—(Encyclopædia Britannica, ed. 1910, p. 810, Astronomy). It is clear what Hipparchus and Ptolemy meant was the movement of the first point of Aries (the fixed point in the ecliptic indicating the beginning of the constellation Aries) with respect to the point where the said year ended. Now I leave it to the judgment of the astronomers to pronounce if the remarks "The rate of motion seems not to have been confidently determined by him (Hipparchus)—or—Ptolemy was so unfortunate as to adopt for the true rate Hipparchus's minimum of 36″ a year......" are justified. The Hindus have still retained this mode of year beginning.

The theory of the Libration of Equinoxes was prevalent also in Arabia for a considerable time, having found its way into Arabian and early European Astronomy from India (*vide* Colebrooke): as such the following lines from Smyth's 'Cycle' will be read with keen interest by all. "Thabit (Thabit-Ibn-korrah) was also a clever astronomer and is said to have improved what Ferghani prepared: he, however, is principally remarkable for having revived the old notion of a variation in the position of the ecliptic, as well as in the fixed stars, which has been called the trepidation: It was his opinion founded on some erroneous observations(?), that the stars moved for some time according to the order of the signs; that they afterwards proceeded in a retrograde direction, and returned to their former places, after which they assumed a direct motion; and that they then had an irregular motion, which was rapid for a certain period, then became slower, and at last insensible. He maintained that the obliquity of the ecliptic was variable under similar periods of increase and decrease; and his opinions prevailed for a considerable time,"—p. 28. A glance at the figure in page 281, will explain the above statements regarding 'trepidation' or Libration of Equinoxes. Therefore now the explanation of the theory of the Libration of Equinoxes will be evident to all.

---

[1] On modern data vernal equinox and perihelion coincided about 4089 B C. (Smyth's Cycle of Celestial Objects) and now the equation of time is zero nearest the vernal equinox on April 16. That is in 4089 plus 1921 or 6010 years a difference of 25 days (from 22nd March to 16th April) has happened. That is in round numbers, in 6000 years the increase is 25 days. Therefore one year $=\frac{25}{6000}$ d. $=\frac{25\times24\times60}{6000}$ min., or 6 minutes longer than the tropical year. It is clear the Nirayana year of the Hindus is the apparent solar year. This type of year will continue to be longer than the tropical till the maximum libration is attained, after which it will lag behind or continue being shorter than the tropical till maximum libration on the other side of the vernal equinox will be attained. However, we notice that the length of 20986 (modern data) apparent solar years is the same for 20986 mean solar (tropical) years.

II

THE LIBRATION OF COLURES AND CONSEQUENT CHANGES IN THE COMMENCEMENT OF THE HINDU NIRAYANA YEAR

In my last note I endeavoured to interpret in the correct way the theory of Libration of Equinoxes universally advocated by the Hindu astronomers. The Libration theory being accepted the next problem which presents itself, is, how to keep the relation between the fixed asterisms (Rasis and Nakshatras) and the months of the year (inseparable with the Hindu astronomers), unchanged, when both the first point of Aries and the point nearest it where the Equation of Time is zero, are not fixed with respect to the stars. From the following considerations it will be seen how this problem had been solved in the past by the Hindu astronomers and how it has to be tackled in future.

The point in the Ecliptic nearest the Vernal Equinox at which the Equation of Time is zero, marks the starting point for the commencement of the Hindu Nirayana year (Nirayana from Nir and ayana, no parting of the mean and apparent Suns about the Vernal Equinoctial point). When this point recedes 30 degrees from a point in the Ecliptic which is recognised as the beginning of one of the twelve constellations of the zodiac (the fixed Rasis), a change is introduced in the beginning of the year, namely one solar intercalary month is added to keep the relation between the fixed asterisms and the names of the months intact. In so doing the precessional period (the period of the revolution of the colures) has to be taken into account, as will be seen from the following example :

Assuming the Vernal Equinox and the Equation of Time zero, coincident in 4000 B. C. at 79 degrees Longitude (Hindu data), they were again coincident 10800 years before that time. During this time Vernal Equinox receded 10800 × 48″ seconds = 144°. Therefore at Longitude 223° (79° plus 144°) the Equation of Time was zero and the Vernal Equinox was also there. On modern data this happened when the Vernal Equinox was happening at about .29° Longitude.

Brennand in his Hindu astronomy 1 page 77, says "To the theory of the revolution of the colures there was a rival doctrine.......... This was the doctrine of the Libration of the Equinoctial and the Solstitial points." These are however no rival doctrines, but theories going hand in hand with the Hindu astronomers. The period of the revolution of colures is, in round numbers 27000 years according to the Hindu astronomers (25868 years in modern astronomy). If now the whole Ecliptic be divided into equal portions each with a processional period of 1000 years, we get 27 such portions (each representing 13° 20′). This is the origin of the Hindu system of the twenty-seven Nakshatras—twenty-eight with Abhijit (alpha Lyrae, Vega) the brightest star in the northern hemisphere occupying the remarkable situation of the Pole Star of the ancient period when the month of Agrahayana was the first month of the year. (Abhijit from prefix 'abhi' and 'ji' जये to conquer.) Abhijit became the pole star and thus being the conqueror, all heavenly bodies began to circle round Abhijit as if in obeisance. When Abhijit was no longer the pole star, naturally it was left out of the reckoning.

The table appended herewith has been constructed to show the probable periods of the successive year

This table is constructed with the following data—Magha = Regulus (Longitude 148°), at the ninth degree of Rashi Sinha (Constellation Leo). Hindu period of Libration—21600 years (Modern 20986 yrs.); Precessional period—27000 years (Modern 25868 years).

Maximum of Libration = 27°

Month beginning the period.	Date.	Periods began.		Duration of Period (Hindu)	Eq. of time zero at (or year begins at).	Asterisms coinciding.	Asterism 180° behind the former.	Vernal Equinox.		Asterisms coinciding	Asterisms at Autumnal Equinox	Pole Star.
		Modern.	Hindu.					Modern.	Hindu.			
Agra-hayana.	1st	15905 B.C	16528 B.C.	yrs. 1425	259°	Mula.	Mrigasira	248·1°	246°	Jyestha (Antares). Abhijit. (Lyra).	Rohini. (Aldebaran).	Abhijit. (Vega).
Kartika	,,	14519 ,,	15103 ,,	1455	229°	Bisakha	Krittika.	228·8°	227°	Bisakha.	Krittika	Do.
Aswina	,,	13132 ,,	13648 ,,	1432	199°	Chitra	Aswini.	209·5°	207·6°	Swati.	Aswini.	Do.
Bhadra	,,	11640 ,,	12216 ,,	1958	169°	U. Phalguni.	P. Bhadrapada.	190°	188·5°	Hasta. Apas (δ Virginis).	Revati	...
Sravana	,,	9647 ,,	10258 ,,	3105	139°	Magha.	Dhanistha. (Srabistha).	161°	162·4°	P. Phalguni. (δ Leonis.)	P. Bhadrapada, Satbhisaj. (λ Aquarius.)	...
Ashada	,,	6629 ,,	7153 ,,	3153	109°	Punarvasu. (Castor Pollux).	U. Ashada	119°	121°	Pushya. Procyon.	Sravana.	...
Jyaistha	,,	3683 ..	4000 ,,	3125	79°	Mrigasira.	Mula.	78°	79°	Mrigasira. β Tauri. Auriga.	Mula.	α Draconis.
Baisakha	,,	665 ,,	875 ,,	3130	49°	Krittika.	Bisakha.	36°	37°	Bharani.	Swati. (Arcturus).	...
Chaitra	,,	2281 A. D.	2255 A. D.	1954	19°	Aswini.	Chitra.	355°	355·6°	U. Bhadrapada	U. Phalguni. (β. Leonis.)	α Ursae Minoris. (Polaris).
Phalguna	,,	4077 ,,	4209 ,,	1425	349°	P. Bhadrapada.	U. Phalguni.	330°	329·5°	Satabhisa. α, γ, Aquarius.	Magha (Regulus).	
Magha	,,	5442 ,,	5634 ,,		319°	Dhanistha.	Magha.	311°	310·5°	Sravana.	Aslesha.	...

beginnings, the names and dates of the months beginning the year for the periods, etc., etc. This is computed according to ancient Indian and modern data, starting from Agrahayana as the first month of the year. The difference between the two sets of results is not much owing to the fact that the ratios between the two sets of data are about the same.

$$\frac{27000}{21600}=1{\cdot}25\ ;\ \text{also}\ \frac{25868}{20986}=1{\cdot}233.$$

On looking at the table for the period beginning with the month of Agrahayana we notice that the year began when the sun was exactly in the beginning of the asterism Mula. The Vernal Equinoctial colure passed through Jyestha (Antares) and Abhijit (Lyra),[1] the star Abhijit (Vega) was also the pole star of the period. The autumnal Equinox passed through Rohini (Aldebaran), and six months after the first of Agrahayana we have the Orion group (Mrigasiras). The solstitial colure passed through Purva Phalguni (delta Leonis) and Satabhisaj (λ Aquarius). Now the naming of the month as Margasirsa and the significance of "I am Margasirsa of the months and Abhijit of the Nakshatras" of the Bhagabata is now clear. The origin of the naming of Nakshatra Mula (the root), Jyestha (the first) and of Rohini from *arohan* or

---

[1] At the commencement of the period Abhijit (Vega) was about 8 degrees behind the equinoctial colure. About 200 years later Abhijit was about 5 degrees behind the same. This is the time to which the 'Aitareya Brahmana' refers as the Abhijit day falling four days before the Vishuvan (Equinox). The late Mr. Tilak was not precise in his statement that with Punarvasu (Pollux) at the vernal equinox Abhijit would be about 6 degrees behind the autumnal equinox (Orion, p. 202). With the vernal equinox in Punarvasu, Abhijit is at least 30 degrees in front of the autumnal one. Mr. Tilak overlooked the fact that the longitudes given in the Suryya Siddhanta are polar. The time when Abhijit was of importance as found in the oldest Vedic literature, and the time when the importance of Abhijit was gone (as in the Taittiriya Samhita) are now clearly discernible.

abarohan, ascent or descent of the Sun from the Equator, according as the observer is situated to the north or the south of it, will now be understood.

Next coming to the period when the year began with the month of Kartica we meet with the peculiar phenomenon that here the Equation of Time was zero at the Vernal Equinoctial point (at about 229°, the Longitude of β and 20 Librae). According to the Hindu data when the Vernal Equinox was at 223°, the Equation of Time was zero exactly at that point and here is the star alpha Librae, Bisakha, exactly on the Ecliptic. Pictorially α Librae represents the pointer, β and 20 Librae the two arms of the balance. Thus a balancing of the two things have occurred in the beginning of this period and the origin of the naming of the Nakshatra Bisakha (from *dvisakha*) the two arms of the balance and that of the Rasi Tula (Libra from libration) from *tulana* indicating equipoise will now be evident. A similar junction of the two phenomena occurred at 82° Long. (modern data), or 79° Long. (Hindu data), and here is the beginning of the Rasi Mithuna (Gemini): and thus the origin of the name of the Rasi Mithuna is clear.

Now when the point at which the Equation of Time is zero—nearest the Vernal Equinox will coincide with the Longitude of the star Revati, a change has to be introduced. The exact year at which this will happen has to be determined by practical astronomers. In a congress of the Indian astronomers it has to be declared that that particular year will have two Phalguna months and thenceforward the 1st of Chaitra will be the first day of the succeeding years until another change has to be effected, which will not take place before about 1800 years after that. For this change the Hindus will not have any objection seeing their ancestors have done the same several times—(*vide* Tilak's Orion, pp. 198-220).

At the commencement of the period beginning with the month of Baisakha, Vernal Equinox fell at 36 degrees and the Equation of Timé was zero in the asterism of Krittika. At this time the Nakshatra Krittika was the first of the series :—

"देवगृहा वै नक्षत्राणि ।···कृत्तिकाः प्रथम° । विशाखे उत्तम° । तानि देव नक्षत्राणि ।······" तैत्तिरीय ब्राह्मण ।

But during Varaha Mihira's time Vernal Equinox was happening in Revati and the Equation of Time was zero, that is, the year began, in Aswini (alpha Arietis). This being so Varaha Mihira and others introduced the Aswini system in place of the Krittikas. In case of the moon we are allowing one intercalary lunar month in every three years and we shall have to do the same in the case of the sun, allowing him one intercalary solar month at the end of, say, 2000 or 3000 years, to keep his relation with the Rasis and Nakshatras intact.

Here I have tried only to give a general survey of the Hindu system of year beginnings consistent with and consequent on the theory of the Libration of Equinoxes which should no longer be considered as a mere matter of speculation in which the Hindus revelled, but an astronomical truth which they discovered after assiduous observations extending over thousands of years.

III

THE SO-CALLED SIDEREAL YEAR AND THE SIDEREAL PERIODS OF THE PLANETS IN HINDU ASTRONOMY.

The term Saura Varsa (Solar year) is met with in all Hindu Astronomical works. This is translated as the Sidereal year, the period for which is given in the Suryya Siddhanta and other Hindu Astronomical works. Now why should the Saura (Solar) year be understood as the Sidereal year, I am at a loss to understand. Burgess in his translation of the Suryya Siddhanta, page 409,—remarks "—The Solar Year as already noticed is sidereal not tropical ;—The length of the solar year and month is subject only to an infinitesimal variation, due to the slow motion of 1 minute in 517 years, assumed for the Sun's line of apsides ;—" Now the question is if the Hindu Solar Year is sidereal how can the length of it vary at all even though it be after hundreds of years; I have never heard of any astronomer saying that the sidereal year is variable because of the movement of the Sun's line of apsides. It is to be noted that the sidereal year estimated upon an average sufficiently large, possesses the essential quality of a standard unit, that of complete invariability. Evidently, because it was wrongly assumed that the motion of the apsides is only 0·1161″ seconds per annum, it was conjectured that this was nothing but the Sidereal Year, the difference being infinitesimal (2·79 seconds). "The period of the planets' revolution about the centre of the epicycle is the time which it takes the latter to make the circuit of the orbit from the apsis around to the apsis again, or the period of its anomalistic revolution. This is almost precisely equal to the period of sidereal revolution in the case of all the planets excepting the moon, since their apsides are regarded by the Hindus as stationary."—Burgess' Translation of S.S., page 207. But the right course should have been to put it that the Hindu Solar Year is anomalistic, and to say, that with the Hindu astronomers the difference between the sidereal and the anomalistic year is negligible. Then it would have been easier for one to find if the motion of the Sun's line of apsides is correct as given in the Siddhantas. The fact is that the annual motion of the apsides should be 11·61″ seconds and not 0·1161″ seconds. The number of revolutions of the Sun's apsis in a Kalpa is given in the S. S. (Suryya Siddhanta) as 387. This is certainly the number of revolutions in 432×10^5 years. The number of revolutions calculated from modern astronomy is 393. The revolutions in a Kalpa of 432×10^7 years should be 38700. The annual movement of the line of apsides in modern astronomy is 11·79″ seconds. (Godfray has it, 11·25″) Consequently the anomalistic year is 365 d. 6 h. 13 m. 48 s. (365·25958 mean solar days). The Hindu solar year is 365 d. 6 h. 12 m. 36·6 s. (365·25876 days), the difference being only one minute and eleven seconds. This year was certainly not meant by the Hindu astronomers to be used as the year of chronology and civil reckoning. That part was left to the Nirayana year to accomplish. Of course it started from an epoch in which the Equinox, apsis and the fixed star which indicated the beginning of the first zodiacal sign, coincided. It was then observed after what interval of time two or all of these phenomena coincided. As an example let us assume that Vernal Equinox and perihelion coincide after 21600 years, the Vernal Equinox and the particular star coincide after 27000 years. Therefore after five coincidences of the Equinox and the apsis (5 × 21600 years or 108000 years) or four coincidences of the Equinox and the star (4 × 27000 years) or 108000 years, the Equinox, apsis and the particular star coincide. The period in which mankind in general are interested is the tropical year, on which the return of the seasons depends. But in this tropical year no account is taken of the position of the apsides on which the—severity or mildness of the seasons depends. The Hindu Nirayana year is the resultant period of the movement of the Equinox and the apsis (please see my first article on "Libration of Equinoxes") and as such it is the period in which mankind in general are most interested. Now-a-days perihelion being in January and aphelion in July, we northerners, are having short, less severe winter and long mild summer. But after ten thousand years from now when aphelion will be in January and perihelion in June, the extreme summer and winter of the southern hemisphere will be transferred to us. Therefore the adoption of the Nirayana Year by the Hindus is more natural and scientific than the tropical. The period of the Saura Varsa (Solar Year—anomalistic) was mentioned in the Siddhantas as it would be of much help to the astronomers for their calculations.

Now I shall pass on to the so-called sidereal periods of the planets, Mercury, Venus, Mars, Jupiter and Saturn as found in Hindu astronomical works. The period of Mars is given in the S. S. as 686·99749 mean solar days. The sidereal period in modern astronomy is 686·9797 days. The mean annual movement of the apsis of Mars is 15·82 seconds. Therefore the apsis of Mars has advanced 15·82 × 1·88 (sidereal period of Mars in years) seconds in one sidereal revolution. On calculation the anomalistic period of Mars comes out to be 686·9902 days.

The period of Saturn as given in the S. S. is 10765·77 days. The sidereal period of Saturn in modern astronomy is 10759·22 days, a difference not to be easily passed over. Now the mean annual movement of Saturn's apsides is 19·37 seconds. Therefore the apsis of Saturn has moved in one sidereal revolution 19·37 × 29·46 (period of Saturn in years) seconds or 570·64 seconds. The mean daily motion of Saturn being 120·5 seconds it will take (570·64 ÷ 120·5) or 4·74 days more for Saturn to reach the perihelion. Therefore the anomalistic period of Saturn comes out to be 10763·96 days. But it is worth while noticing that the period as corrected by the *Bija* is 10764·89 days. Similarly the sidereal period of Mercury being 87·9693 days, the anomalistic period is 87·9694 days (assuming the mean annual movement of the apsis to be 5·84 seconds). The period in the Suryya Siddhanta is 87·9697 days. The sidereal period of Venus being 224·7008 days, and the mean annual movement of her apsis being 2·68 seconds towards the west, one would naturally expect the period as given in the Siddhantas to be shorter than the sidereal period (supposing the Hindu periods anomalistic), and strange enough the period in the Suryya Siddhanta is 224·6986 days, that corrected by the *Vija* is 224·6990 mean solar days (the anomalistic period calculated on modern data is 224·7005), both shorter than the sidereal period. The sidereal period of Jupiter being 4332·58 days, the anomalistic period should be 4332·85 days (assuming the mean annual movement of the apsis to be 6·65 seconds). The period in the Suryya Siddhanta is 4332·32 days. This even after correction by the *Vija* is 4332·42 days, shorter than the sidereal period.

This shortening of the period of Jupiter and the lengthening of that of Saturn are due to this: "The remarkable fact, however, that the mean motion of Jupiter was then more rapid and that of Saturn less so than it had formerly been, was detected. This anomalous phenomenon, which is now so well known to be caused by the mutual perturbations of those planets on each other, was a startling difficulty; but Cassini investigated the conditions, and boldly conjectured that the time would arrive, when those effects would be of a contrary nature. His happy prediction has been beautifully verified."—Smyth's 'Cycle,' p. 52.

Now one may ask, assuming these periods in the Siddhantas to be anomalistic what about the period of the moon which is exactly sidereal? The answer to this is that the position of the full-moon among the well known twenty-seven asterisms of the Hindus gives rise to the names of the months and this is happening since time immemorial, and as such astronomers are bound to give prominence to her sidereal period. "Naturally enough since the moon is the most conspicuous of the nightly luminaries, and her revolutions more rapid and far more important than those of the others, the asterisms would practically be brought into much more frequent use in connexion with her movements;..."—Burgess: Translation of the Suryya Siddhanta, page 352. The anomalistic and draconitic (nodical) periods may be easily calculated from the data given in the Siddhantas.

Here I add a table of the revolutions and movements of the apsides and nodes of the Planets according to the Suryya Siddhanta and modern data. The revolutions are for the period 432×10^5 years, assuming the values as given in Watson's Theoretical Astronomy and in Smyth's Cycle of Celestial Objects to remain constant through ages. The revolutions according to the Suryya Siddhanta are certainly for the same period (432×10^5 years). The design in putting the revolutions of the Planets in 432×10^5 years is that we can find the movement in a century in seconds by simply multiplying by 3. Thus the revolution of the Sun's apsis in 432×10^5 years being 387,

Planets.		Revolutions in 432 × 10⁶ years.		Movement in a Century.	
		(Modern)	(S. S.)	(Modern)	(S. S.)
Mars					
apsis	...	527	204	1582″	612″
node	...	776	214 (267-Bhaskara)	2329″	642″ (801″-Bhaskara)
Mercury			×2		×2
apsis	...	195	368	584″	1104″
node	...	261	488 (521-Bhaskara)	782″	1464″ (1563″-Bhaskara)
Jupiter					
apsis	...	222	900	665″	2700″ *
node	...	527	174	1581″	522″
Venus					
apsis	...	89 ×10	535 (653-Bhaskara)	268″ ×10	1605″ (1959″-Bhaskara)
node	...	624	903 (893-Bhaskara)	1871″	2709″ (2679″-Bhaskara)
Saturn					
apsis	...	646	39	1937″	117″
node	...	647	662	1942″	1986″
Sun					
apsis	...	393	387	1179″	1161″
Moon					
apsis	...		4882030	401″ (daily)	14646090″ (400″·98-daily)
node	...		2322380	190″·6 (daily)	6967140″ (190″·74-daily)

---

* Maraldi the gifted nephew of Cassini, by recurring to an observation made B. C. 300, and comparing this with the position during his time, calculated that in 1934 years Jupiter's node have retrograded with respect to the fixed stars, as much as 14½ degrees. This gives the movement in a century as 2700 seconds.

the movement in a century is (387 × 3) or 1161″ **seconds.** Hence the annual movement is 11·61″ **seconds. In some** cases it will be seen that the values are almost the same with modern mean values, in others certainly **errors have** crept in. A glance at the table will show that the values for Mars and Mercury had been interchanged. From the manner of writing the two words Kuja, **कुज** Budha **बुध** or Kauja (**कौज**) and Baudha (**बौध**) in Devanagri type this error has crept in. The same error will be observed about Mars and Mercury while speaking of the retrogradations of the Planets in verses 53 and 54, chapter II, Suryya Siddhanta. In support of this as to how errors have crept in and accumulated, I shall quote here what that great genius Bhaskaracharyya said in connection with this very subject in his Siddhanta-Siromani:

"सा तु तत्तत् भाषा-कुशलेन तत्तत् चिन्हसंज्ञानज्ञेन श्रुतगोलेन एव श्रोतुं शक्यते न अन्येन। ग्रहमन्द शीघ्रोच्च पाताः स्व स्व मार्गेषु गच्छन्त एतावतः पर्य्ययान् कल्पे कुर्व्वन्ति इति अत्र आगम एव प्रमाणम्। स च आगमो महता कालेन लेखक अध्यापक अध्येतृदोषैः बहुधा जातः। तदा कतमस्य प्रामाण्यम्। अथ यदि एवम् उच्यते गणितस्कन्ध उपपत्तिमानेव आगमः प्रमाणम्। उपपत्त्या ये सिध्यन्ति भगणाः ते ग्राह्याः तदपि न। यतो अतिप्राज्ञेन पुरुषेण उपपत्तिः ज्ञातुमेव शक्यते। न तया तेषां भगणानाम् इयत्ता कर्त्तुम् शक्यते। पुरुषायुषोऽल्पत्वात्। उपपत्तौतु ग्रहः प्रत्यहं यन्त्रेण वेध्यः। भगणान्तं यावत्। एवं शनैश्चरस्य तावत् वर्षाणां त्रिंशता भगणः पूर्य्यते। मन्दोच्चानां तुवर्षशतैर् अनेकैः। अतो नायम् अर्थः पुरुष साध्यः इति। अतएव अतिप्राज्ञा गणकाः साम्प्रतोपलब्धि अनुसारिणं प्रौढ़गणक स्वीकृतं कमपि आगमम् अङ्गीकृत्य ग्रहगणिते आत्मनो गणित गोलयोः निरतिशयं कौशलं दर्शयितुं तथा अन्यैः भ्रान्तिज्ञानेन अन्यथा उदितान् अर्थांश्च निराकर्त्तुम् अन्यान् ग्रन्थान् रचयन्ति। ग्रहगणिते इतिकर्त्तव्यतायाम् अस्माभिः कौशलं दर्शनीयं भवतु आगमो योऽपि कोऽपि अयम् आशयः तेषाम्। यथा अत्र ग्रन्थे ब्रह्मगुप्तस्वीकृत आगमो अङ्गीकृत इति। तर्हि तिष्ठतु तावत् उपपत्त्या भगणानाम् इयत्ता साधनम्। अथ यदि उपपत्तिः उच्यते तर्हि इतरेतराश्रयदोष शङ्कया वक्तुम् अशक्या।"

ग्रहगणिते मध्यमाधिकारे भगणाध्यायः।

Now some may doubt that as the revolution is said to be completed when the Planet returns to Revati, how can these be the anomalistic periods? I wish them to ponder over the original text: "......पौष्णान्ते भगणः स्मृतः।"

पौष्ण from **पूषन्** (the sun)[1] **अन्ते निकटे** (**पौष्णस्य रेवती योगताराया अन्ते निकटे प्रदेशे**, etc., Ranganath), whether it does not mean the perihelion and consequently the anomalistic period. The secondary meaning is the star Revati with which the apsis was coincident in the beginning. Similarly 'Meshadi' (first of Aries) or end of Revati came to mean the Initial or starting point—the first point of Aries in the case of tropical revolution the aphelion point in the case of anomalistic revolution, etc. *Vide Suryya Siddhanta* verses 45, 48, 57 and 67, Chap. XII, and Ranganath's commentary on verse 48. "**मेषादौ विषुवद्वृत्तस्य क्रान्तिवृत्तभागे रेवत्यासन्ने**, etc." Moreover the mention of Revati 'Tara' does not mean that we are to look always for a particular star shining in the heavens just as we are not to understand the expression 'Dhruva Tara' as the two pole stars shining through ages in the heavens, but simply as the poles: '**ध्रुवयोर्दक्षिणोत्तरस्थिरतारयो वद्धं ब्रह्मणानिवद्धं**, etc.'—Ranganath, notes on sloka 73, Chap. XII, also verse 43 of the same chapter **मेरोरुभयतो मध्ये ध्रुवतारे नभःस्थिते। निरक्ष देश संस्थानामुभये क्षितिजाश्रये॥** "In both direction from Meru are two pole-stars, fixed in the midst of the sky: to those who are situated in place of no latitude, both these have their places in the horizon" Regarding 'Bhagana'—**द्वादशराशिभोगाद् भगण इत्यर्थः**—Ranganath, note on verse 27, Chap. I. These rasis may be Sayana, Nirayana, etc.—"**द्वादशराश्यङ्किते वृत्ते उच्चस्थानात् चतुर्विभागात्मक एकैको भागो राशित्रयात्मकोपदसंज्ञः**—Ranganath, Chap. II. 29. *Vide* also "**अजादि केन्द्रे सर्व्वेषां शैघ्रे मान्दे च कर्म्मणि। धनं ग्रहाणां लिप्तादितुलादावृणमेव च॥**—Chap. II. 45. "There is nowhere in this work any allusion to them (Hindu names of the signs) as constellation, or as having any fixed position of their own in the heavens: they are simply the names of the successive signs (rasi, bha) into which any circle is divided, and it is left to be determined by the connection, in any case, from what point they shall be counted."—Burgess, Translation of the S.S., page 181. Still more I should ask learned men to think over the meaning of Revati from रेवृ-प्लवगतौ प्लवगतिः प्लुतगतिः—Siddhanta Kaumudi (motion in very long interval of time): "एकमात्रो भवेद्ध्रस्वो द्विमात्रो दीर्घ उच्यते। त्रिमात्रस्तु प्लुतोज्ञेयो........."—याज्ञवल्क्य शिक्षा। (मात्रा—interval), and the design in the naming of the star will be evident to all.

---

[1] Synonyms for रेवती—"अन्त्यभं रेवती पौष्णं पूषा इति च कथ्यते।"

Here I acknowledge my indebtedness to Prof. C. V. Raman, M.A., and Prof. N. K. Mazumdar, M.A., in kindly helping me with valuable books necessary in completing this paper.

In conclusion I express my heartfelt gratitude to the Hon'ble Sir Asutosh Mookerji, Kt., C.S.I., for his keen interest and never failing encouragement and allowing these papers to find a place in the Journal of the Department of Letters, Calcutta University.

Aryanism and the Rig-Vedic Age

BY

H. BRUCE HANNAH.

V

My criticisms of certain of the more prominent views advanced in *Ṛig-Vedic India* having hitherto, to some extent, been of what is called the "destructive" order, it is only fair that I should now attempt to put together something of my own on "constructive" lines, and so give Mr. Abinas Chandra Das an opportunity, should he feel so disposed, of subjecting me to a return fire of similarly "destructive" criticism. I am the more willing to submit to this ordeal—whether the "raking" come from Mr. Das's batteries or from any other direction—since nothing but advantage can accrue from any theories of mine or of others being put to the test—the severer the better. If they withstand it, well and good. If they are demolished, also well and good. It does not so much matter whether our theories are right or wrong. If right, Time will assuredly vindicate them. If wrong, there will never be lacking somebody capable of pointing the fact out to us, or at least anxious so to do. What really does matter is that we should be *thinking things out for ourselves*: in short, that we should be *live wires*. Anything is better than meekly swallowing all that conventional writers (however "scholarly" their style) give to us to swallow, and which they have themselves accepted blindly from specialists and other "authorities," some at least of whom are *soi-disant*, and merely clever essayists. Certainly accept from others as much as you like, provided you think it merits acceptance. But should you feel that it is unsound, do not let the fact that the opinion is put forward by a specialist, or a writer who merely repeats what he has learnt from men with "names," bluff you into the stupidity of imagining that Literature and Research can ever consist of writing conventionally scholarly papers based on data of that kind. Moreover, I am strongly of opinion that nobody has any real right to criticize others, who is not prepared to set up, in place of whatever he is attacking, something of his own which he claims to be better.

Well, we started out with the question, propounded by the late Mr. Bāl Gangadhar Tilak: "Can we, or can we not, ascertain the age of the Vedas?" But, before tackling that question, we first have to answer another, *i.e.*, "What do we mean by 'the Vedas'"?

My idea of the origin of what eventually underwent special development in ancient proto-historical India under that name—more especially, perhaps, the *Ṛig-Veda Saṃhitā*—is something like this. It is, of course, nothing but a suggestion, lightly and rapidly sketched—a mere temporary hypothesis, which may or may not be verified in course of time, yet a nucleus of conjecture—not wholly unfounded in both reason and fact—round which the activities of future research may perchance be pleased to congregate.

First, I brush aside all thought of Sapta-Sindhavaḥ as "the oldest life-producing region in India"; as the spot where, from his earliest evolutional beginnings, Man first developed into maturity; as the country whose autochthonous inhabitants were Mr. Abinas Chandra Das's "Indo-Āryans"; as a region surrounded by "four oceans" which are even referred to in the *Ṛig-Veda*, and more particularly by a vast Sea which lay east of it and filled the "Gangetic Trough" as far as say modern Assam, and by another Sea which lay south or south-east of it and covered the territories now known as Rājputāna; as a country which, up to the close of the Miocene sub-period as regards the eastern Sea, and up to the close of the Pliocene sub-period as regards the Rājputāna Sea, was wholly cut off by these two Seas from all communication with India south say of the Vindhya mountain-range; and lastly as the sacred home-land in which the "Indo-Āryans" aforesaid "lived and flourished as a civilised people in the Miocene or Pliocene epoch."

I take it that the Āryas were a fair race—by which I mean a Rosy-Blond race—in Sanskrit *śukla*, or *svityam;* that, when first we see them, or can reasonably infer their existence, they were dwelling round the shores of Lake Zarah, in the country now known as Seistān, and were ethnically identical with the Airyānians of Airyavō-Vaēja—say modern Bokhārā; that they remained in Zarah-Lake land up till about B.C. 1151; that in the wilderness regions around them dwelt a multitudinous but barbarous Xantho-Melano-Leukochroic (*i.e.*, Yellowy Dark-White) race, known as the Dahyūs, or Tokhs (*i.e.*, People of the Hills or Snowy-Ranges), descended from the still more ancient People of Nūm-Mā, or Si-Nim (*i.e.*, Vehrkavō-Danghavō, or "Wolf-Folk"), better known as the Kāssi, or Kephēnian, or Kūṣa Race; and that in those days India (ignorant yet of the Ārya and all that that name stood for) was inhabited by *Niṣādas*, or Aborigines, of sorts—ranging from Yellows in the North to Blacks in the South, and between these, in the Centre, a mixed and probably small and slight race—corresponding there, after a fashion, to the Dark-Whites of the Great Central Zone in Western Asia and still farther west in Mediterranean regions—and also, in North-Western India only, for the nonce, by a branch of the Dahyūs above-mentioned. In later Sanskrit days, these were called *Dasyūs*. I submit that, some time shortly after B.C. 1151 aforesaid, the Āryas abandoned Zarah-Lake land and settled somewhere in Sapta-Sindhavaḥ, though the evidence for their presence at all there (at least on the Indian side) is astoundingly meagre; that the cause of their flight was the appearance on their western border of five powerful and aggressive hosts, who in reality were Pūra-Satiū and Yādai-Amorite fugitives from Nāharīn, who brought with them the culture in vogue in Syria in the 12th century B.C., including what was afterwards known as the *Brāhmi* script, and three other distinct ethnoi whom it is more difficult to identify; that, later on, these five nationalities, or *Janāhs*, resumed their march eastwards, and eventually settled down for a time amongst the Dasyūs and Niṣādas of the Indus Valley, and became known as the Pūrūs, or Pūravās, the Yādūs, or Yādavās, the Tūrvaśas, the Anūs, or Anavās, and the Drūhyūs; that, in course of time, the Dasyūs—having acquired the civilization of the Pūrūs (or Pūra-Saṭiū) and the Yādūs (or Amorites of Yādai), and learnt their military secrets, and effected matrimonial alliances with the Pūrū royal family, became ambitious and aggressive, and, at the head of a league known as the *Bhāratas*, strove to obtain the hegemony in the country, and eventually, having successfully obliterated all traces of their identity with the original Dasyūs, actually won ascendancy and glory under the name of the *Kūrūs*, *Kauravās*, or *Krivis*, even going the length of speaking with contempt of the original Dasyūs in their "literature"; that this undoubted triumph was effected, not by force of arms—though that had been attempted, and failed—but by Brāhmanical priest-craft, and an elaborate campaign of subtle intellectual intrigue; and lastly, that not only were these so-called Kūrūs in no sense Āryas, but the Pānch'ālan Pūrūs, Yādūs, Tūrvaśas, Anūs, and Drūhyūs (ever popularly and even in scholarly circles represented to this day as *the* Āryas), were in no sense Āryas either. Thus, I reject all conventionally accepted ideas associated with the names and considerations above set forth.

Moreover, rejecting also all wild dreams regarding ages so unimaginably remote as the Miocene and Pliocene sub-periods of the Tertiary or Ḳainozoic Era, I am content to go back for my beginnings no further than to what may be called *Mythological Mediterranean times* (themselves sufficiently nebulous; though more or less definite knowledge is, in these days, rapidly eating into what has hitherto been the sphere of our nescience in that connection): *i.e.*, in regard to date, to anything earlier than say B.C. 6000, and later than say the end of the last Ice-Age in Europe, whenever that was. Be it distinctly understood, however, that these epochal limitations are not intended to represent anything in the shape of accuracy of chronological statement. They are only adopted as provisional assumptions—mere aids to exposition—since we must start, even thus nominally, from somewhere. It will be readily understood, I trust, how difficult is the task, not of saying all that it is necessary for me to say by way of intelligibly setting forth the views I hold on this subject, but of compressing it within the limits of a paper, or even a series of papers, such as this. Adequately to describe in all its bearings the position I take up, would really require the writing of a book: for even the minor ramifications are one and all big and important subjects in themselves. However, I shall try to do my best.

The old inconceivably lengthy Melano-Leukochroic, or Ouranian, Age of the Mediterranean World—with its Moon-Worship, Sun-Worship, and Nature-Cults—had long since closed, in a political sense. Even its brilliant and more progressive successor, the Rhodo-Leukochroic, or Zeus Age—with its still surviving but metamorphosed types of Sun-Worship and other Cults—had also nearly run its course, and was approaching its end. Throughout the Mediterranean World, the Rosy-Blonds were still dominant; and probably centuries had elapsed since they sent out colonies into Central and North-Western Europe, who, superposing themselves upon, and amalgamating with, the "Alpine" (Kăssi-descended Xantho-Melāno-Leukochroic, or Yellowy Dark-White) races established there since Neolithic days, were building up new race-stocks, amongst whom the Cult of "Hyperborean Apollo" (which must have been a form of Greek *Āb-Hēlios*, or *Āb-Helios*, not the much older Trōjan *Āb-Ālah-Ōn*, or *Apeilōn*) is supposed to have been in vogue, but was really only a conceit of later Greek literature, and some of whom eventually returned to a wholly transformed Mediterranean World, to contribute to the birth of the Hellenic Race. Also the eastern statelet of Zāgreus had long since come and gone and been revenged, and the beginnings of other and greater developments in regions west of Zāgros were awaiting, in the womb of Time, the striking of the hour of their portentous birth. Divine names in something like IŌ and its variants were in the ascendant in Europe—particularly, perhaps, as seen in "Yāvān," the then name, or at any rate a very ancient name, of those renowned territories which, centuries thereafter, were to acquire even added glory in association with the probably originally solar name of *Hellas*, autochthonously the country of mythological *Hērā*, *i.e.* of *El* as adopted into the Zeus *régime*. Nevertheless, everywhere throughout the Great Central Zone—even beyond the Mediterranean World, eastwards as far as Western Asia—like ancient writings showing more or less clearly through a palimpsest, the still older divine names in something like EL and its variants, which had dominated the preceding Melāno-Leukochroic Age, were still in evidence, and still flourishing, especially in areas where developments in Volution were less advanced than they were in the go-ahead, more central Mediterranean dominions of that dazzlingly brilliant political and cultural organization which, in deified personificational language, we may conveniently refer to as *Zeus*. For instance, as far eastwards as Western Asia—in some now not easily ascertainable form, probably at one time connected with the Moon- and Sun-Cults of the old Melano-Leukochroic Age—had penetrated the divine name which we moderns first come across in the shape of that word rendered *Vāruña* which is said to have been known to the Mitannians of the 15th century B.C. Possibly it had an archæan etymon in old Melano-Leukochroia. And possibly out of that had developed in Mediterranean regions the name *Ouranos*. This, in Western Asia, was represented, as some think, by Mitannian *Vāruña*. My own views in this connection are as follows. I reject the idea that the divine name *Vāruṇa* found its way westward from an Āryan East, and particularly from an Āryan India, into Mitanni of the 15th century B.C. I also reject now the idea that it arrived there from the Mediterranean West, either as a form of *Ouranos*, or as an independent development out of any older Mediterranean etymon out of which *Ouranos* may be thought to have developed. In my opinion, shortly put, it originated amongst the Hittites of Boghaz-Keui, as their name for Nannar, the old Moon-god of Haran and Ur. It is generally written *Vāruṇa*, but this really was not its Hittite form. Winckler has given us that. It was *Ūrū-w-na*. This may be read either *Urūwa-na*, or (as *w* and *m* were interchangeable), *Urūm-na*. In early

Melano-Leukochroic times, throughout the Great Central Zone running right across the world from the Pyrenees and Atlas in the West to what we now call China in the East, the supreme and ubiquitous cult was Moon-Worship. Originally, in those days (besides special and local names) the Moon was known as *Aa*—whence, no doubt, the name of that basic old "Semitic" ethnos, the *Aamū* or *Aa-ammi*. Compare also Romic *Aah*, as in *Aahmēs*. In course of time *khū*, *ghū*, or *hū*, meaning "Illustrious," or "Prince," was added—whence the eventual name *Ākhū*, otherwise called *Sin*. Incidentally it was also associated with *Ākū*, or *Āgū*, "High." In Sūmer the chief seat of this cult was Ur, where the divinity seems to have been regarded as bi-sexual, and was called Nannar. When, according to the story in *Genesis*, Abram went from Ur to Haran (*i.e.* to the capital of Mitanni), the God he worshipped is said to have been *El-Shaddai*, also bi-sexual. Further, in Haran the Moon-god was then dominant, and was also known as Nannar. Why, then, all this talk about *Vāruṇa* in connection with Mitanni? The Mitannians of the 15th century B.C. did *not* so call their Moon-god. They called him Nannar. Indeed, that name lasted there till the Christian Era. It was the Hittites who called the chief deity of the Mitannians *Ūrū-w-na*. Now, what, in Hittite, did that signify? It signified: "Belonging to Ur," or "Lord of Ur," or "He (phallic) of Ur." Naturally, along this line of thought, *Vāruṇa*, as a rendering of *Ūrū-w-na*, is cut off from all connection with old *Ouranos*. We can no longer accept *Ouranos*, or even its earlier European etymon, if any, as the source from which the name of the Moon-god in 15th century B.C. Mitanni came. It is by no means impossible, however, that *Ouranos* found its way into the West from Babylonia, say *viá* Lydia, with the early Etruscans, who were of Hittite blood. At any rate, through the channel of the Hittite language, as spoken at Boghaz-Keui and elsewhere in Asia Minor, what writers usually call the *Vāruṇa* of B.C. 15th century Mitanni (but which was in fact Nannar described as "Lord of Ur") now seems clearly traceable back to old Ur of the Chaldees of say the 20th century B.C. and before. This disposes finally of the conventional idea that *Vāruṇa* is an Indo-Āryan name, and must have been taken to Mitanni by Āryan migrants from India. As a matter of fact, the form *Vāruṇa* is a development out of, if not a corruption of, the original *Ūrū-w-na*, the meaning of which, after analyzing the Hittite roots, is known; and it found its way to India with those Pūra-Satiū and Yādai Amorite fugitives from Nāharīn who went east soon after B.C. 1151 and became the Pūrūs and Yādūs of *Ṛig-Vedic* records.

Again, in connection with that aspect of the old Melano-Leukochroic Nature-Cult which was specially concerned with the mysteries of Re-Production, the divine name of the great and ancient sex-god *On*, *Ān*, or *Aun* (*Aven*), commonly called "Mighty Father On," *i.e.*, *Āb-Ālah-On* aforesaid, was on everybody's lips, throughout Asia Minor and Syria, nay, perhaps throughout the Great Central Zone, east and west. From this came the later Trōjan *Apeilōn*: but not the still later Greek divine name *Āb-Hēlios*, or *Āb-Helios*, *i.e.*, *Āb-El*, or "Father El," by us generally rendered *Apollo*, the sun-god, with which, however, *Apeilōn* originally had really nothing whatever in common. May not, therefore, *Āpa-Vāl-Yān*, or *Āpa-Vār-Yān*, have been related to *Āb-Ālah-On*, or *Apeilōn*, say as a corruption of, or approximation to, it? Time works many miracles in the shape of wonderful and startling transformations and transmutations: and in the vicissitudes of fortune experienced by these old divine names we see this most interestingly exemplified. In the earlier stages of the old long-vanished Melano-Leukochroic Age—whether as deified personifications of Nature, Life, Fecundity, and the Forces and Organs of Re-Production, spiritually not lewdly regarded, or as deified personifications of the Moon and its complex and subtle influences—these old divine names (*Āb-Ālah-On*, *Apeilōn*, *Āpā-Vāl-Yān*, or *Āpa-Vār-Yān*, and *Vāruṇa* and *Ouranos* in their original associations), all gradually underwent a complete metamorphosis. Other imported ideas became in course of time connected with these cults, until at last the sexual or quasi-sexual associations that originally used to cling around them passed more or less into oblivion, and were succeeded by, indeed transmuted into, and identified with, those conceptions which eventually accumulated around *Āb-Hēlios*, or *Apollo*, the sun-god, Homeric *Ouranos*, the sky-god, and *Vāruña* the *Ṛig-Vedic* sky-god, whether of the Night or of the Day. But in after ages *Āpa-Vāl-Yān* and the word rendered *Vāruña* travelled still farther East, and found themselves, in primitive India, in the company of a sun-god named *Sūrya*, whose feminine counterpart was *Sūryā*. The question at once arises : Did *Sūrya* (masc.) derive from Western *Hēlios*? And if so, how? And did *Sūryā* (fem.) derive from Western *Hērā*? And if so, how? Certainly, both of these seem very likely. I shall revert to this subject later on. Now, this progress ever eastward may have been effected in three ways—(1) naturally, along the incalculably ancient alignment of the Great Central Zone, (2) as accompanying the flood of migrant Rosy-Blonds pouring into the Orient from subsided Rhodochroia, and (3) as accompanying the Pūra-Saṭiū and Yādāi-Amorite and other fugitives who fled from Western Asia ("Rivers-land") into Central Asia *circa* B.C. 1151, and eventually turned up in trans-Indus Sapta-Sindhavaḥ as the Pūrūs, Yādūs, Türvaśas, Anūs, and Drūhyūs of the *Ṛig-Veda*, whom scholarship and popular belief in India insist on regarding as "the Āryas." I shall consider each of these possibilities more fully later on. So, also, the Near-Eastern Melano-Leukochroi, or Dark-Whites, of B.C. 4th millennial Ūri, or Kiūri (later Agadē, or Akkad, *i.e.*, "Highlands"), and Kengi (later Sūmer, or "Lowlands") had their *Bel*, which was simply a shortened form of original old *Āb-El* (by the later Babylonians of B.C. 2050 and the still later Assyrians rendered *Ābū-Ilū*), or "Father El." In much later, say B.C. 12th century, Syria, we find the well-known variant *Baal*, which is traceable back to the very same old Mediterranean Melano-Leukochroic source. Mr. Abinas Chandra Das calmly represents, *Baal* and *Ṛig-Vedic Vala* as identical (*Ṛig-Vedic India*, p. 192). Well, perhaps they were: but then, again, perhaps they were not. As the American guest remarked: "You cain't quite always sometimes tell." Certainly, *Vala* was not a Sun-god at all, but a Drought-fiend. In any case, however—tested by Mr. Das's own dominant attitude, that everything racial and cultural outside *Ṛig-Vedic* India looks back to that India for its original source of life and significance, and therefore that *Baal*, being a divine name of mere Western Asia, must have derived from *Vala*, the *Ṛig-Vedic* divine name—Mr. Das's presentation of the matter will not "hold water," "at least not good water," as the saying is. *Baal*, in that form, happens to have been not an original name. Undoubtedly it was a corruption, or shortened form, of the much older real name *Āb-El*, meaning "Father El," just as the original form of *Bacchus* was *Āb-Iacchos*. If, therefore, as Mr. Das would have us believe, *Baal* and *Vala* were identical, *Vala* must also be a modified or shortened form of some more real original in India—an earlier divine name compounded say of *Āpa* and some unknown equivalent in Miocene or Pliocene Sapta-Sindhū for *El*. But, outside *Āpa-Vāl-Yān*, is there evidence anywhere to be found that any such name ever existed? I venture to think that not even Mr. Das—fearless in these matters though he be—will contend for that. For him *Vala*, in that form, is a definite, original, self-subsistent name. Hence, I fear, we must conclude that in this matter Mr. Das has been woefully but willingly misled by a very superficial resemblance between two perhaps entirely different words. In this respect indeed, he appears, to hold himself ever at the mercy of the slightest provocation, and rises readily to every dangling fly. Witness, for example, his all too readily venturesome remark, on the very same page, that *Reschuf*, the name of a god who, he says, was worshipped by the Phœnicians (whom, by the way, he actually identifies as descendants of the Paṇis of ancient Sapta-Sindhū), "for aught we know may be a corruption of the Vedic word Ribhu"! On this my only comment is that, "for aught we know," *Rig-Vedic Vala* may have been a subsequent and far-travelled variant, on Indian lips, of an original Babylonian, Assyrian, and Syrian *Bel*, or *Baal*. That—as well in reason as on the available evidence—is at any rate a much more likely view than Mr. Das's. Witness also his assertion—perfectly ridiculous, yet apparently put forward in all seriousness—that the name *Chaldæa* (which, of course, was nothing more or less than *Kaldā*, *Kardā*, or *Kasdā*, *i.e.*, the "dā," or "deh," or "country," of the Kāssi), derives from *Choladeça*, the designation, he says, conferred on the coastlands of the Persian Gulf in southern Sūmer by an imaginary party of Chola colonists from Southern India, who, some time in the dimly remote past, had settled there as followers of Mr. Das's wonderful but equally imaginary Paṇis (*Rig-Vedic India*, pp. 201, 202).

Again, in the Valley of the Nile, amongst the illustrious old Romiū—where civilization, though developed in comparative isolation, and on lines peculiarly its own, and though even tinged with Rhodo-Leukochroic influences, was yet really rooted in the culture of the long-vanished Mediterranean Melano-Leukochroic Age—the divine name *Rā* was at times supreme. Now, *Rā* was nothing but a transmuted form of *El*, through the intermediate variant *Lā*: for in that land, as in many others, *l* and *r* were phonetically interchangeable. This, indeed, seems to be a characteristic of all languages still preserving phonetic memories of the more rudimentary stages of human progress. Not impossibly, too, in Mitanni (the beginnings of which I shall describe presently), the divine name *Mitrā*, which is really of Hittite origin, was simply old *El*, or *Lā*, or *Rā*, as conceived and worshipped by the inhabitants of that country, *i.e.*, the "Mits." Lastly, even to this day, throughout what we call the Semitic World—nay, throughout that still more extensive realm known as Islām—flourishes the divine name *Allah*, or *Al Ilah*, *i.e.* *Al Lah*—yet another mere variant of old Melano-Leukochroic *El*: for, though disguised in long familiar conventional garb, it is really nothing but "The *Lā*," or "The *El*." All these old divine names, therefore—*On*, *Apollōn*, *Vāruña*, *Āpa-Vāl-Yān*, or *Apa-Vār-Yān*, *Ouranos*, *El*, *Rā*, *Lā*, *Bel*, and *Mitrā*—would seem to have been more or less related to each other; some of them, at times, were perhaps in some vague way even interchangeable: and their fluid, kaleidoscopic, and elusive associations somehow suggest the idea that Moon-Worship, Sun-Worship, and the Worship of the Forces of Re-Production, were in olden times rather mixed up, or at any rate mixable up, with one another.

But there was also another very distinct and very prominent group of divine and other names which did *not* belong to the above "palimpsest" order. In their original associations they were clearly rooted in the remote old Melano-Leukochroic Age. Nevertheless, they undoubtedly appear as ostensibly integral parts of the system of divine and other names in something like IŌ and its variants which specially characterized the new Rhodo-Leukochroic Age. In other words, they had been deliberately appropriated and incorporated into that new system by the powers that were. Poetically or mythologically expressed, *Zeus* had married *Hērā*. Hence, of course, the appearance of *El* in a feminine form. Indeed, this name *Hērā* was the leading representative of the group. We find them in a vast variety of protean transformations—probably impossible, or at least very difficult, now to trace—but back of them all stands the dim yet majestic old divine name, El. In connection with the ubiquitous modifications of this original basis which later times reveal, we have to remember that in many regions not only were *l* and *r* phonetically interchangeable, but *h* and *s* were also subject to a similar sort of law. Thus, to mention only a few, in Greek Mythology, or in later Greek poetry based on that Mythology, we have *Hērā*, *Hēlios* (Cp. *Sirius*, though I am aware that this is alleged to come from *Seirios*), *Hellas*, *Selēne* (Cp. the word *Serene*), *Helene*, and so forth. And in Khem we find *Hērū*, or *Hor*, rendered *Sol* by the later Romans.

But though—up to the epoch of the subsidences in Rhodochroia—the Rosy-Blonds were dominant throughout the Mediterranean World and its spheres of influence, yet, from an ethnical point of view, humanity as a whole (leaving out the American continent and Australia) was roughly divisible into 3 main types (1) the *Xanthochroi*, or *Yellows*, i.e., the *Tūrānian* ethnoi, in the northernmost zone; (2) the *Melano-Leukochroi*, or *Dark-Whites*, in the Central Zone, stretching from the Pyrenees and Atlas in the extreme west, to the farthest limits of Asia in the extreme east—throughout which regions (save for the quasi-blond Libyans near Atlas) Man was small, slight, and brunet, and inclined to be dolicho-cephalic, yet with a tendency to partake also of the characteristics of the racial types with whom he came most into contact, whether to the north, or to the south: those who dwelt in Syria and the regions round about becoming specially known later on as the "Semites": and (3) the *Blacks*, swarming throughout the southernmost zone, and ultimately, no doubt, tracing back their descent to "Gondwanaland" origins. Of course, too, besides these 3 foundational types, there was also one other important type, which was really the result of a vast amalgamation, seemingly initiated somewhere in the neighbourhood of the Caucasus, between the Tūrānian Yellows of the northernmost zone and the Dark-Whites of the Central Zone, in days (incalculably remote) when all these contributory elements were in a primitive stage of development in volution: I refer to the barbarous Kāssi, who for the most part, confined themselves, or were confined, to the great mountain-ganglions and wilds in every continent,, *e.g.* to the uplands of Central and South-Eastern Europe, to the plateaus and wildernesses of Asia, and to the highlands of Kephēnian Ethiopia in Africa. Throughout all these zones, up to the period of which I am now about to speak, such a being as a Rosy-Blond man had been absolutely unknown.

For untold ages—say up to B.C. 6000, though I do not pretend that that is any more probable than B.C. 8000 or B.C. 9000—the seat and centre of Rhodo-Leukochroic (*i.e.* Rosy-Blond) culture, power, and glory had been in the territories now represented by Greece, Crete and the Ægean Sea. This last did not exist then. Neither did Crete in its present islandic form. There was no communication between the Axine and the "Great Green Sea," as the 18th dynasty Pharaohs called the Mediterranean. From the points now known as Salonica and the Dardanelles in the north, down to the southern shores of Crete, the land-area was continuous. In other words, what we call Asia Minor extended westward in one solid mass as far as the western shores of Greece. Probably there was no separate Morea then: and what for ages has been Crete was then merely the southernmost limit of a compact and unbroken *epeiros*. Huxley, we know (see *Hasisadra's Adventure*), rejects the idea that sudden, widespread, and overwhelming disaster overtook the regions now occupied by the Grecian Archipelago, and metamorphosed them into their present broken-up, insular aspect. Nevertheless, that—or something approximating to that, though not of a cataclasmic nature—is exactly what I submit occurred, somewhere about this epoch, B.C. 9000-6000 aforesaid. Moreover, Huxley's remarks have reference to a very wide geographical area—much wider than that which I have in view here. Also, in respect of time, his observations reach back to a period much more archæan than any with which we need concern ourselves just now. Furthermore, a writer in the *Encyclopædia Britannica*, quoted by Mr. Abinas Chandra Das (*Rig-Vedic India*, p. 26), says—

> "there is strong reason to suspect, from the evidence of recent volcanic change in that locality" (he had been speaking of the Black Sea, the Caspian, and the Aral, as now constituting merely the 'survivals' of a former great 'Asiatic Mediterranean') "that the opening of the Bosphorus took place within a period which geologically speaking was very recent."

Be it remembered that the levels of the two Seas—the European Mediterranean, or "Great Green Sea," and the Asiatic Mediterranean, eventually reduced (*inter alia*) to the *Pontus Axinus* (afterwards *Euxinus*)—were not the same. The former was lower than the latter. Hence when the northern barriers burst, the one sea drained off into the other—the process lasting until both seas had attained a common level. The down-flow could not have been either very violent or in alarming volume, as is demonstrated by the surprising narrowness of the two still-existing channels through which the flood must have found its way, *i. e.* the Bosphorus and the Dardanelles. Nevertheless, even at the rate at which the change was in fact effected, the result—so far as epeiric Rhodochroia was concerned—seems to have been tremendous. One after another—slowly, perhaps, but none the less surely—considerable areas must have disintegrated, subsided, and at last disappeared beneath the ever-augmenting waters, until eventually the Archipelago, as it has been known historically for centuries, was formed. Some writers, it appears, have sought to identify these events with the so-called *Deukalian Deluge*. The suggestion is a harmless one, and was sure to occur to somebody. Traditions of a *Great Deluge* are world-wide. Nearly every historical ethnos had such a tradition, and of course localized it. *Deukalion* is merely the name with which the version localizing the tradition in Greece is associated. The common truth behind *all* these special and local traditions is simply this that, as noticed in a previous paper, sometimes in the inconceivably remote past, deluge after deluge periodically overwhelmed the Earth, as, one after another, its Saturn-like rings of volatilized substances sank lower and lower till they reached the critical level where condensation into water naturally took place; and eventually one great final *Varsha* occurred—after which the skies cleared, the Sun shone forth in all its glory, and the first Rainbow appeared in the heavens. Since then, specific countries may from time to time have been visited with more or less extensive and disastrous floods, but none of them are in the slightest degree associable with *The Deluge* above referred to. All—even the Babylonian and Biblical Floods—have been comparatively insignificant affairs, of a purely local and temporary importance, and memorable only for those ethnoi whom they actually affected.

Now, when an entire country is subjected to the experience which thus overtook and overwhelmed Rhodochroia, what happens to its inhabitants? Two alternatives lie before them. One is to stay at home and be drowned. The other is *migration*, with a view to effecting new settlements elsewhere. Naturally the Rhodo-Leukochroians adopted the latter alternative. Thus, it was at this tremendous crisis in the fortunes of their ancient and illustrious Home-Land that, as already outlined in my lectures last November, wave after wave of Rosy-Blond migrants issued out of disintegrating Rhodochroia, and rolled forth into the East. Europe, to the north, was thickly inhabited, not only by Colonials of their own blood, but also by the multitudinous "Alpines" of the Central and South-Eastern uplands above-mentioned. Whether, in those days, any such people as the so-called Hyperboreans really existed out-side the imaginations of later Greek poets and other *literati*, we need not stop to enquire. Africa, as an area of settlement, meant perilous, costly, and troublesome sea-voyages. Besides, cultured old Khem lay right in their path; beyond Khem were the very undesirable Kāssi of the Upper Nile; and, apart from these considerations, they were averse from submerging their identity as Rosy-Blonds in the seething ocean of undeveloped Gondwanaland humanity which filled up the rest of that enormous continent. On the other hand the Xanthochroi of Tūrānian Asia were a highly civilized, physically fine, and morally estimable race; in Western Asia also—besides the

Amorites, blonds like themselves—were to be found the "Semites" (though that particular name had probably not yet arisen); and lastly, straight into the realms that seemed so inviting, lying ready to be traversed, was the very convenient land-bridge of Asia-Minor, as we now call it.

In those early days, the sub-stock of mixed Xanthochroic and Western Asiatic Melano-Leukochroic descent who, under the name of the Khatti, Kheta, or Hittites, eventually established themselves in the interior of Asia Minor, and acquired considerable renown and power, as well there as in the regions afterwards known as Nāharīn, Mathēna, or Mitanni, and Syria, had probably not yet come into existence, at least as a nation.

Whether the Amorites of the Orontes Valley, and in particular of the country known as *Ja-ū-di*, *Ja'di*, or *Yādāi*, near later Samal, in Northern Syria—an undoubtedly reddish-blond type of humanity—were of originally Mediterranean Rhodo-Leukochroic stock, or only of Libyan stock (a kind of proto-blond humanity, whose ruddiness, if any, was not exactly identical with the lily-white and rosy tints of the true Rhodo-Leukochroi); whether, even if of Rhodo-Leukochroic stock, they arrived in 'Amorā, *via* the Asia Minor land-bridge, with these migrating floods of Rhodo-Leukochroi, or had effected their settlement there at some still earlier age (which was highly probable); or whether, if of Libyan stock, they had found their way into Western Asia, also ages ago, but *via* archæan Khem, and so journeyed up to the Orontes Valley from the South—these are questions into which I do not at present enter.

What we are concerned with just now is the fact that—consequent upon the break-up of ancient Mediterranean Rhodochroia, any time between say B. C. 9000 and B. C. 6000—a mighty flood of Rosy-Blond migration passed into Western Asia. This was an epochal event: for it marked something which had never been known before—the presence of Rosy-Blond man in Asia, as a permanent settler. I mean in such overwhelming force as to inaugurate an ethnical revolution in the Orient—for, from this point of view, the Amorite settlements in Syria were practically negligible.

Thus, in those days, throughout the entire Orient, there were no Airyānians, no Āryas, no Babylonians, no Assyrians, no Medes, no Persians, no Cathayans, no Syrians (in the sense in which Abram was said to have been a Syrian—see *Deut.* xxvi. 5), and most certainly no Hebrews and no Jews, though possibly the Israelites were already individuating as an "Aamū" sub-tribe—in short, none of the great fairish historic races of the East with whose names and fortunes we have all, more or less, been familiar since our very childhood. How so? Because not one of them had then been born! Hitherto nine out of every ten of us, I venture to assert, have probably been under the vague impression that as *adscripti glebae* in the East, the famous old ethnoi above referred to have *always* been in existence, ever since the dawn of Time. I now propose to lift a corner of the veil from the long-obscured conditions under which these ancient and well-known races really sprang into being as brand-new stocks of humanity.

I speak of a mighty flood of Rhodo-Leukochroic emigration, as if it had been one great movement which took place during a particular year or years and then ceased. But what really occurred was naturally spread over a very long period—probably a century or more—during which stream after stream, first of adventurers and explorers, then of genuine emigrants—tall, rosy-blond, enterprising dolicho-cephals—issued from the old Mediterranean Home-land and fared forth into what must assuredly have been for many of them "The Unknown." Of course they took with them their goods and chattels—everything, in fact, that was portable. But over and above these "household gods," much else must also have gone with the departing hosts in the shape of some at least of the cultural treasures of their unique race—its peerless traditions, its dialects, sciences, and arts, its divine and other names, its philosophies and faiths, its laws and institutions, its usages and manners, its hymnologies and folk-songs, all its distinguishing characteristics, physical, intellectual, intuitional, and spiritual, and (from a worldly point of view, perhaps more valuable than aught else) its pre-eminent capacity for profiting, especially morally, from the lessons of experience—a trait which, probably more strikingly than any other, distinguishes the Culture-Races from the Barbarous (though possibly highly civilized) Races.

Let us also note here another important fact. Assuming that these momentous happenings are assignable to *circa* B. C. 6000, what, in the way of revelations, do we obtain by a reference to the Zōdiac? The Celestial Vernal Equinox must then have been at the point between 1 Cancer and 30 Gemini; the Celestial Summer Solstice would have been between 1 Libra and 30 Virgo; the Celestial Autumnal Equinox would have been between 1 Capricornus and 30 Sagittarius; while the Celestial Winter Solstice would have lain at the point between 1 Ariēs and 30 Piscēs, our present conventional, though not actual, Spring Equinox!. In the terminology of Hindū astronomers, the Celestial Winter Solstice, or *Ayanānta*, would have been between *Rāsis Mesha* and *Mina*; while the Celestial Vernal Equinox, or *Vishuvat* for *Vasanta*, would have been between *Rāsis Karka* and *Mithūna*. In those days, be it remembered, all Eastern—and probably then comparatively undeveloped—races, are supposed to have opened their year calendrically at what, for each of them, would have been its actual Winter Season. The Rhodo-Leukochroi, as we shall see, opened their year calendrically at the Spring Equinox. A recollection of these facts will prove useful when we come to deal with early Sūmerian and Babylonian history, and with the calendrical reforms provided for the Agadēans upon the advent in their midst of the cultured and masterly Rhodo-Leuko-Tūrānians. They will also be useful to us in considering hereafter the calendrical systems of all those great historical races of the ancient Orient whose ethnic and cultural origins are traceable, in part at least, to the in-coming migrant Rhodo-Leukochroi.

Now let us follow the march of events, as they occurred from time to time after this wonderful epoch, *circa* B. C. 6000. Tracing the slow but steady and impressive progress eastwards of these energetic, resourceful, and culture-laden Rosy-Blonds, we find that the first noticeable result of their advent in Western Asia was the birth of that multitudinous, powerful, and in every way wonderful race which I propose to call the ***Rhodo-Leuko-Tūrānians***—the first great brand-new sub-stock to appear in the now metamorphosing Orient. In personal appearance they were beautiful: indeed, probably much like what we now know as the *fair* idealized type of Slāv. Their geographical cunabula, or area of characterization, may be defined roughly as the regions stretching between the upper courses of the Euphrates (perhaps even the Halys) on the west, and the southern end of the Caspian Sea—or possibly it was then the great Asiatic Mediterranean—on the east. Regarded thus broadly, it is not impossible that they were identical with those widely diffused nomadic folk to whom, in much later Babylonian records, vague reference is sometimes made under the name of the *Umman Mandā*. But their final and concentrated expression is undoubtedly to be found in that interesting and highly cultured settled ethnos who were known to the 18th dynasty Romiū in the 15th century B.C. as the *Mathēnians*, or *Mitannians*, but who, before then, had been established for centuries in the territories lying within, *i.e.*, on the eastern side of, the great bend of Frāt near Niy, thus corresponding with what is called in the Bible Haran, or Paddan-Arām, *i.e.*, Arām of the Two Rivers, or later Upper Mesopotamia, and adjoining the region more specifically known to Thothmēs III as Nāharīn, or the "Rivers-Country," between Euphrates and Orontes. As a matter of fact, too, this Mitanni—wherein lay the "City of Nahor" (*i.e.*, of Nāharīna)—was really the country upon which Abram and the other elder Hebrew patriarchs, when sojourning down south as strangers in Khārū, are said by Ezra (or whatever that name stands for) to have looked back so wistfully as their true home-land (*Gen.* xii. 1; xxiv. 4, 5, 10; xxviii. 2). Moreover, it was clearly the realm over which those other two (and probably more historical) O. T. celebrities, Tūdkhūla, King of Nations in the 20th century B.C., and Kūshān Rishathaim (probably also meaning "Rosh of Satiū, or Peoples") in the 15th century B.C., are recorded to have ruled. Lastly, it is there that—in the names of certain of its deities, usually rendered Vārūña, Mitrā, Indrā and the Nāsatyau—we come upon our first "find" of evidence in support of the proposition that the stream of transmitted culture, in the guise of divine names such as these (which were really Hittite names), moved from the Mediterranean West eastward, and not, as the old school of Sanskritists and others would have us believe, from the Orient (especially the Indian Orient) westward into the old Mediterranean World or the countries more or less adjacent thereto.

Of course, such a stupendous happening as the amalgamation of vast numbers of these eastwardly migrating, but temporarily settling; Rhodo-Leukochroi, or Rosy-Blonds, with the autochthonous Tūrānians dwelling between say the upper courses of Euphrates, or even perhaps the Halys, in the west, and the southern end of the Caspian Sea, or perhaps the great Asiatic Mediterranean, in the east, and the consequent coming into existence in those regions of the Rhodo-Leuko-Tūrānians, was not a thing which could have been effected even in a generation or two. The inter-marryings and blendings would have gone on for centuries: and centuries more would doubtless have had to elapse before the new race-type attained to noticeable manifestation. For the actual coming into recognized being, therefore, of the new race, we may reasonably allow say an entire Zōdiacal Age. This—a period of about 2155⅔ years—would, in this case, have been represented by Gemini. All that time the Celestial Vernal Equinox—originally at the point between 1 Cancer (*Rāsi Karka*) and 30 Gemini (*Rāsi Mithūna*)—was slowly but steadily, and no doubt imperceptibly, shifting retrogressively through Gemini, or *Mithūna*, from point, or degree, 30, to degree 1, until at last an entirely new Age was ushered in by its entry into degree 30 of Taurus, or *Rāsi Vrishabha*—to the old Romiū of Khem known as *Mes-Rā* ("Child of the sun-god Rā"), the "Young Zōdiacal Bull," or *Abir*, as the Near-Eastern Melano-Leukochroi, or Dark-White "Semites," called it. This epoch, according to my arithmetic, would have been Conventional B.C. 4311⅓, or say True B.C. 4441⅛. Hindū astronomers would describe the Celestial Vernal Equinox (*Mahāvishūpa Sankrānti*) as just entering the *Nakshatra Mrigashirsa*; and the Winter Solstice, they would say, was somewhere in *Nakshatra Uttara Bhadrapada*. We would describe it as just entering Aquarius (*Rāsi Kūmbha*). This epoch, then, must have synchronized with what the old Romiū of Khem called the Ptāh-Sekhet Age—for the Summer

Solstice, or "Place of Fire," was then just entering 30 Leo (*Sinha* or *Sekhet*) from the direction of Virgo. It was also what the late Mr. Bāl Gangadhar Tilak, in chapter iv of his book *The Orion*, calls the "Orion epoch," or "*Agrahayani* epoch": for, he submits, *Mrigashirsa* is really a synonym for *Agrahayani*, which literally means "commencing the year," and, as Pānini teaches, supplies a derivative word for the month of *Mrigashirsa*.

All this is no doubt very interesting: but the important fact to note is that—subject to what I am about to say presently—the world, whether east or west, or north or south, as yet knew nothing whatever—indeed, had not yet so much as ever heard—of the *Ārya* and *Āryanism*. Most certainly neither the man nor the name had ever yet reached India, then the exclusive home of divers kinds of more or less degraded *Nişādas*—yellow, mixed, and black—and of those *Dasyūs* who there represented the barbarous yellowy dark-white Kāssi-descended Tokhs, or Wolf-Folk, of highland and wilderness Nūm-Mā, or Si-Nim. And whatever, in that respect, was true of India, was equally true of Sapta-Sindhavaḥ, or Sapta-Sindhū, as Mr. Das usually calls it. Even the *Airyānians* had not yet come into existence.

Furthermore, if, up to this epoch—the opening of the Tauric Era—the world was absolutely ignorant of the Āryan individual, it follows that the sacred books of that individual, the *Vedas*, were also known to nobody, at least under that name. Whether what eventually became their abstract contents were evolving elsewhere, is another question entirely.

But while, throughout these 2155⅗ years of Gemini (*Rāsi Mithūna*), the great ethnic amalgamation above referred to was in progress, other happenings and other outside peoples were by no means standing still. *All* the eastwardly migrating Rosy-Blonds did not settle down permanently in Rhodo-Leuko-Tūrānia. In fact, the main mass of them proceeded on their way, or perchance merely diffused themselves farther eastward, till at last they came to the regions called in later Macedonian times Sogdiānā and Bāctria, or roughly modern Bokhārā. The country thus traversed was part of the wilderness and hilly territory then and for ages past the haunts of the barbarous Wolf-Folk, or Tokhs, and which in due time the probably related Khatti, or Hittites, were accordingly to know as Si-Nim, and the later Babylonians and Assyrians as Nūm-Mā—both names literally meaning "Wolf-Lands." Eventually, however, they acquired the imported meaning of "Highlands"—whereupon the "Wolf-Folk" became known as the Tokhs, or "People of the Snowy-Ranges." In Bokhārā the diffused Rosy-Blonds settled down permanently: but as, in their dialect, "Highlands" was represented by the word *Airyān*, the country became so called, while they themselves acquired the derivative name of *Airyānians*, *i.e.*, "Highlanders." In course of time Airyān became known as *Airyavō-Vaēja*, or the "Airyānian Home-land." The Tokhs of the surrounding wilderness country—which now received the name of Tūrān—they called *Dahyūs*, literally "Hill-men," though these did not necessarily all live in the uplands. Doubtless they also called them *Tūrs*: and possibly also *Vehrkavō-Danghavō*, or "Wolf-Folk." Here, also, it is convenient to explain that the Kāssi-country specifically known as Kāshshū was of course an integral part of old Si-Nim, or Nūm-Mā—and originally it was even included under that wide name. When, however, the name *Airyān*, meaning "Highlands," came into vogue, Kāshshū also adopted that name (for the Kāssi could and can never resist imitating the cultured races); but there it took the form *Eil-am*—whence the familiar name *Elām*, which, however, was more general than *Kāshshū*.

Now, this further diffusion eastwards of the original **Rosy-Blond** migrants may have begun either early or late, in the Gemini, or *Mithūna*, Age—Conventional B. C. 6467-4311$\frac{1}{3}$—and therefore the definite beginnings of *Airyān*, as a newly established country, and of the *Airyānians*, as an individuated people, are assignable to what can only be an equally indeterminable stage in the succeeding Tauric, or *Vrishabhan*, Era, which extended from Conventional B.C. 4311$\frac{1}{3}$ to Conventional B.C. 2155$\frac{2}{3}$. The probabilities are that the process of Rosy-Blond diffusion eastward from Rhodo-Leuko-Tūrānia began during the amalgamations which gave rise to the new ethnic sub-stock in the last mentioned country, and did *not* wait till that country and that new sub-stock had actually come into existence. Hence, I conclude that Airyavō-Vaēja and the Airyānians began definitely and recognizably to individuate some time *early* in the Tauric Era—in round numbers, say about Conventional B.C. 3500. *Of the Ārya, specifically so called, there were as yet, however, no signs whatever.* I incline to think that that group did not originate till Assyrian influences had spread eastward and had given rise to differences of opinion in Airyavō-Vaēja. Also, there were then no such countries as Media and Persia, because no such peoples as the Medes and the Persians had ever yet come into existence. Their beginnings were still hidden—the former in Mitannian fortunes, and the latter in Kephēnian developments.

Meanwhile the ancient races in Mesopotamia had been following out their destiny. In both Uri, or Kiūri (Agadē)' and Kengi (Sūmer), the population consisted very largely of Near-Eastern Melano-Leukochroi, or Dark-Whites. Indeed, in Agadē, these formed the bulk of the inhabitants. In other words, they were mainly of what afterwards came to be called "Semitic" stock. In

Sūmer, however—where these Dark-White autochthons, or at least some of them, were known as the "Aamū"—there was also a very strongly represented, perhaps dominant, Tūrānian element, who, however, were probably not pure Xanthochroi, but a blend between that foundational stock and West Asian representatives of the small slight Dark-Whites of the great Central Zone. To the east, in the uplands of Si-Nim, or Nūm-Mā (now beginning to be called *Eil-ām*), dwelt the powerful and perhaps imitationally civilized, but certainly barbarous, Kāshshi, or Kāssi. Just then they were in one of their envious, restless moods, and were for ever raiding their more cultured neighbours to the west. Indeed, sometimes their aggressions were of a more permanent character than attaches to what, in these connections, specialists seem to delight in calling "Semitic *razzias*." Flitting about in the extreme north, were a number of shadowy rulers, who are sometimes styled kings, and sometimes merely *patēsis*, or priest-viceroys. For instance, Utāg was a *patēsi*, while Enbi-Ishtar was a king. Quite possibly the over-lords of these dimly perceptible *patēsis* were Kāssi potentates whose star was temporarily in the ascendant.

But, if we interrogate the records of the past, we shall find that, instigated by an innate devilish spirit, Barbarism—ever represented by some Kāssi-descended ethnos—is periodically obsessed by an irresistible impulse first to deceive, and then to attempt to destroy, the Cultured World for the time being. The epoch we are now dealing with seems to have been marked by one of these treacherous and stupendous upheavals. Culture was represented by Agadē and Sūmer: Barbarism, of course, by the Kāssi in Elām.

In the meantime, Rhodo-Leuko-Tūrānia had advanced far along the road of Progress, both material and otherwise.

Just as, ethnically, it was a blend of Rosy-Blond blood and local Tūrānian blood, so, in regard to Civilization, it was a composite expression of Rhodo-Leukochroic and local Tūrānian cultures. As a military power—though it had never yet been put to the test of actual warfare—it was recognised as being in the very first rank. In short—whether in respect of its economical resources, or politically, or culturally, or from any other point of view—it was already becoming the hub of the civilized universe, the great Distributing-Centre whence, from that time forward, were to issue into the Orient all those mighty but hitherto cloud-covered streams, whether of Racial Development or of Cultural Progress, which afterwards so magically transformed the East, and of which the long line of pontiffs from whom we are supposed unthinkingly and unquestioningly to take our "knowledge" have hitherto vouch-safed us such a nebulous, contradictory, and *upside-down* account.

It was to this great power that, in the day of their extremity, the Melano-Leukochroi of Agadē applied for assistance in the mighty task of repelling the murderous assault of Barbarism. In short, they formally requested the Rhodo-Leuko-Tūrānians to take peaceable possession of their country, to administer its affairs, and to protect it from external aggression. The Rhodo-Leuko-Tūranians consented: and it was in pursuance, apparently, of the arrangement so come to that, *circa* B.C. 2750, as is supposed, though I am much more inclined to suggest B. C. 3750, we find Shārrū-Gī, with his "fair"-complexioned followers, riding into Agadē and ushering in the dawn of an entirely new *régime*. For some reason or other, however—probably race-pride, which urged the dominant new-comers to assume an attitude of aloofness, and thus stood in the way of a fusion of races—this first attempt at Reform in Agadē proved wholly abortive.

Possibly Shārrū-Gī was the founder of that early line of rulers—consisting, as far as is yet known, of 3 kings—which is usually styled the *Dynasty of Kish*. Now, ***Kish*** reminds us strongly of *Kūsh*, and therefore suggests the idea that before Shārrū-Gī's advent, Agadē had been under Kāssite domination, and that, when the intruders had been driven out, Shārrū-Gī and his successors found it convenient to continue their dynastic style, or otherwise acquired it. Then, *circa* Conventional B. C. 2650, as King thinks, or B. C. 3750 as Petrie maintains (though these dates do not much matter, as we are really concerned for the present with more or less indefinite periods), another celebrity arrives from the North, in the person of Shārgani-Shārri, better known as Sārgou I of Agadē, founder of the famous *Dynasty of Akkad*. His descendant, Narām-Sin, or Narām-Ākhū, was equally renowned. *Akkad* was Rhodo-Leuko-Tūrānian for old Near-Eastern Melano-Leukochroian *Agadē*. This—or the perhaps Kāssite form *Uri*, or *Kiūri*—had long been the name of the country as meaning "Highlands," but it was during the Dynasty of Akkad that, for civil and political purposes, it received the definite official designation of *Akkad* as an administrative area. Shārgani-Shārri and his successors were not only able warriors and administrators: they were also wise and far-sighted statesmen. More broad-minded than Shārrū-Gī, they took up anew the old problem of local Reform, and, applying themselves earnestly to their task, they did not rest till Akkad had been completely metamorphosed—ethnically, politically, culturally, and religiously.

Now, whatever may be thought about the earlier of these ancient dynasties, the establishment of the Dynasty of Kish (Shārrū-Gī's dynasty) seems to have been regarded by our authorities as having been probably, and that of the Dynasty of Akkad (Shārgani-Shārri's dynasty) as having been certainly, the result of "invasions" from the North-West. As a matter of fact, however, in each case the taking-over of the country (Agadē) was an entirely *peaceable process*, undertaken and carried out *at the request and with the co-operation* of the Agadēans themselves, who—besides being desirous of repelling the Kāssite menace—were anxious to bring themselves up to date, but had no statesmen of their own possessed of the ability necessary to achieve that end. Hence the calling in of the great Rhodo-Leuko-Tūrānian chief—much as the Jutish leaders were called in by the Britons in the 5th century A.D. Moreover, by most writers, including Myres, these so-called "invaders" are usually described as "Semites." If they were really Semites, they must, of course, have been what I am calling Near-Eastern Melano-Leukochroi, *i.e.*, they must have been Dark-Whites. But *were* they? Nay, under the extraordinary name of "Western Semites" (I mean extraordinary in view of its application), King actually identifies them with the *Amorites*!—whereby all is thrown into confusion; for the Amorites were certainly *not* Melano-Leukochroi, *i. e.*, not Dark-Whites, but beautiful Rosy-Blonds, like the Rhodo-Leukochroi. I have already commented upon the confusion of thought which has led our authorities so far astray in this connection. Perhaps yet another explanation is to be found in the nebulous ideas (still apparently thought quite good enough) which used to prevail regarding the territories north of Akkad. Says Mr. Donald A. Mackenzie—

> "A vague but vast area above Hit on the Euphrates, and extending to the Syrian coast, was known as the 'land of the Amorites'" (*Myths of Bab. & Ass.*, p. 110).

If we look at any good map, we find that this includes, not only all Mesopotamia, but actually Mitanni too. Nevertheless, our authorities ought to have known that the fact of all these regions being so loosely called *Amūrrū* and *Mārtū* (which, in their narrower sense, are very well-known as Amorite centres) does not justify them in calling people who come say from Mitanni *Amorites*, much less in dubbing them *Western Semites*, or *Semites* at all. Assume that the Newcomers (styled the "Invaders") hailed from Mitanni, or, as I am calling it, pursuant to my general ethnological scheme, Rhodo-Leuko-Tūrānia. Later on—in the loose, woolly-minded way above referred to—they were said to have come from *Amūrrū*, or *Mārtū*, which, as we see, might have included not only Syria, where the real Amorites dwelt, but also Mitanni and indeed all Mesopotamia as far South as Hit, where Amorites did *not* dwell. On this our authorities —and a crowd of parrot-voiced writers after them—incontinently declare that these Newcomers (really from Mitanni) were *Amorites* and *Western Semites, i.e.*, had come from Syria! Shārgani-Shārrī and his followers, we know, styled themselves rulers of the "dark-faced," or blackhead," people. Tne expression "dark-faced" excludes the supposition that the race subjected (not "conquered"), *i. e.*, the Agadēans, were Tūrānians: for the Tūrānians, being Xanthochroi, may quite reasonably be described as "fairish" in countenance. On the other hand, the expression "black-head" might very well indicate Tūrānians, for Tūrānians usually, if not always, have black hair. But, as a matter of fact, the Tūrānians in this part of the world—*i. e.*, the non-Melano-Leukochroians of Sūmer—*were accustomed to shave their heads.* Mr. King himself gives us this information. Thus, the expression "black-head" could not have applied to them. The only other community to whom it could have applied was the Near-Eastern Melano-Leukochroi, or "Semites" proper; and, as the country specifically under notice was Agadē, the Melano-Leukochroi referred to must therefore have been the Melano-Leukochroic or genuinely "Semitic" inhabitants of Agadē.

We may take it, then, as beyond all reasonable doubt, not only that the masterly newcomers from the North—who, entering Agadē under the leadership of Shārrū-Gī and Shārgani-Shārrī, obviously considered themselves as a *fair* race who were being superposed upon an at least comparatively *dark* race—were not "Semites," whether "Western" or otherwise, and were certainly not "Amorites," but belonged to the newly-formed ethnic sub-stock dwelling between Halys and the southern Caspian whom I am calling the Rhodo-Leuko-Tūrānians; but also that the inhabitants of Agadē who voluntarily subjected themselves to the rule and tuition of these fair foreigners were Near-Eastern Melano-Leukochroi, or Semites proper, and, as such, were none other than those "black-headed ones" who are mentioned in line 32 of the *Tablet of the Fifty-one Names*, as quoted by Pinches at p. 43 of *The Religion of Babylonia and Assyria* (Religions Ancient and Modern), 1906.

These considerations bring us almost within sight of the memorable epoch associated with what is usually called the *First Dynasty of Babylon* and the founding of Babylon itself: for hitherto Mesopotamian humanity had never so much as heard of that great name. But, before we deal with that, our passing attention is claimed by the interest attaching to an important reform of the Agadēan calendar effected about this time by the wonderful Rhodo-Leuko-Tūrānian administration then in official control of the country. In those days—like all comparatively undeveloped races throughout the East, nay, probably throughout the world—the Melano-Leukochroic Agadēans, and the mixed Melano-Leukochroic and Tūrānian Sūmerians, were accustomed to open their year calendrically in their actual Winter season, or rather in what they thought was their Winter season. This, in theory, they equated with the Celestial Winter Solstice. Now, about Conventional B. C. 2155⅔ the Celestial Vernal Equinox was actually on the point of passing out of 1 Taurus (*Khar-Sidi*, or the "Propitious Bull"; Indian *Rāsi Vrishabha*) and entering 30 Ariēs (*Sara-Ziggar*, or *Bar-Ziggar*, *i. e.*, the "Sacrifice of Righteousness"= Indian *Rāsi Mesha*). Therefore, their actual Celestial Winter Solstice was just passing out of Aquarius (*Ās-a-ān*, or "Abundance of Rain"=Indian *Rāsi Kūmbha*) and entering Capricornus (*Abba-Uddū*, or "Father of Light"=Indian *Rāsi Makara*). Nevertheless, their calendars were not. in fact, set to that point. The ages-old conventional calendar, which showed the Celestial Vernal Equinox as being just between Cancer and Gemini (*Sū-kūl-nā* and *Kas*=Indian *Rāsis Karka* and *Mithūna*), and the Celestial Winter Solstice as being just between Ariēs and Piscēs (*Sara-Ziggar* and *Sē-ki-sil*=Indian *Rāsis Mesha* and *Mina*), was still in actual vogue. Thus, their artificial Calendar-Clock was a long way out of harmony with actual Natural Time. Their nominal seasons did not in the least coincide with the real seasons as they in fact occurred. We need not be in the least surprised at this. We are ourselves, at this very day, living under similar delusions. The actual Celestial Vernal Equinox, to-day, is lying somewhere in or near 30 Aquarius. But conventionally, not only popularly but even in scientific circles, it is still always taken as lying at the point between 1 Ariēs and 30 Piscēs! In other words, we are just about a month and a little more out of our correct reckoning! For instance, when our calendars tell us that we are at say the end of September, we are really, according to Nature, only at the end of August! The only difference (one solely of degree) between the Agadēans and Sūmerians of say B. C. 2155⅔, and our hardly more enlightened selves, is that they were about three times more out of their reckoning than we are. But that is merely because they were a much older ethnos than we are; for at present there seems to be no indication whatever that we intend to rectify our calendar, or even that we realize the absurd and annually increasing irregularity of our position. Quite possibly, therefore, we may continue in our blissful ignorance for as long as they did. However, the practical steps taken by the Rhodo-Leuko-Tūrānians were these. They explained to the Agadēans that Sara-Ziggar or Bar-Ziggar (the name of the then *month*, as well as of the *Zōdiacal Age*), which the Agadēans had theretofore regarded as marking the season of the *Winter* Solstice, would, for the next ensuing $2155\frac{2}{3}$ years, manifest all the natural *indicia* of a *Spring* month, in consequence, of course, of the slow westward shift of the Equinoxes and Solstices: and thereupon they said—"Since that is a fact, let us accept it, and, while still continuing, as in the past, to open our year calendrically at this point or season, let us henceforward say that our year opens, no longer with the *Winter* month Sara-(or Bar-) Ziggar, but with the *Spring* month Sara-(or Bar-) Ziggar." And that is exactly what was in fact done, save that the month Sara-(or Bar-) Ziggar was given the new name of *Nisān*.

From that time forward, then, throughout the Civilized World (*i. e.*, civilized on a basis of dominant Rhodo-Leuko-Tūrānian Culture), and as long as the Ariēs Era lasted, the Celestial Vernal Equinox was conventionally regarded as lying between 1 Taurus and 30 Ariēs; the next great world-change in this connection not taking place until the epoch of the opening of the Christian Era, at the point between 1 Ariēs and 30 Piscēs—where, conventionally, it is still universally (though wrongly) supposed to lie. For Precession never ceases.

There is reason, however, to believe that the Calendrical Reform thus made by the Rhodo-Leuko-Tūrānians was restricted to Agadē, and was never adopted by the Sūmerians. Indeed, that ancient community seem to have adhered religiously to their age-long custom of starting the year calendrically from the Celestial Winter Solstice. In an Inscription engraved on a diorite statue of Gūdea, *patēsi* of Lagash in Sūmer (after Narām-Sin of Akkad's time), we find particulars of offerings made to the goddess Bau (Gūla = Aquarius) in her temple "on the day of the beginning of the year, the day of the festival of Bau." Bau was the consort of Nin-Girsū (Ninib), the god of "the southern sun," which Miss Plunket thinks should be regarded as the sun in its *yearly*, not its merely daily, course, and therefore as representing the Winter Solstice (*Ancient Calendars and Constellations*, pp. 208, 209). Nin-Girsū means "Lord of Girsū"—perhaps a suburb of Lagash. He was the same as Nirig, or Enū-Reshtū, and was the god of agriculturists (*Bab. & Ass. Rel.*, by Pinches, pp. 55, 76, 77). Miss Plunket thinks the offerings above referred to are evidence of a calendrical reform in Lagash from some earlier Accadian calendar, the beginning of the year being thereby transferred from the stars of Ariēs to those of Aquarius (*Anc. Cal. & Const.*, p. 209). Rather, however, does it seem to me to mean that this opening of the year at Aquarius (Winter Solstice) with offerings to Bau, was simply the calendrical system that had been in Lagash from of old, and that the reforms in Agadē at the opening of the Ariēs period had not been followed in Sūmer—at any rate not in Lagash. Accepting Nin-Girsū as the god of the Southern (in the sense of the Wintering) Sun, Miss Plunket suggests that Gūdea's New Year's Day, or Festival of Bau, was held at the time of the Winter Solstice (p. 51). Of course, even if this was so, the custom would only have endured for as long as the Sun at that Solstice was passing through Aquarius (Gūla, or Kūmbha), or as long as the tradition of that fact was remembered and given effect to.

This will be a convenient place to note that it was probably at some epoch early in the Tauric Era (Conventional B. C. $4311\frac{1}{3}$-$2155\frac{2}{3}$), that the ethnic elements out of which the Khatti, Kheta, or Hittites, of Central Asia Minor were formed, polarized into definitely individuated political or national conditions. This, I think, is reasonably deducible from the fact that Hittite Symbolology is dominantly associated with some at least of the 4 main Zōdiacal positions at the time of the opening of the Tauric Era—*e. g.*, Bulls for the Vernal Equinox; Lions, Set, Fire, and so forth, for the Summer Solstice; and Eagles, perhaps intended as emblematical of the Autumnal Equinox, at the place where our Scorpio lies. Doubtless further discovery will some day round off and realise the idea here adumbrated, by digging up the emblem which, in Hittite belief, was associated with the remaining position—the Winter Solstice, at the place where our Aquarius now lies. Presumably, it will be something ostensibly symbolic of water issuing out of an urn, or otherwise flowing, though really representing an out-pouring of spiritual influences.

The *Dynasty of Akkad* was followed by the *Dynasty of Ur* (not yet Ur of the Khaldees), which lasted for about 117 or 119 years from (in round numbers) B.C. 2400, with continuous parallels of *patēsis* in Lagash, and one at Umma. It was by this great line that the dual style, "King of Sūmer and Akkad," was first formally assumed. It represented a Sūmerian, *i.e.* a Tūrāno-Eastern Melano-Leukochroic, Revival. One of its most famous monarchs was Dūngi who, amongst other achievements, is said to have subjugated the neighbouring Kāssi. Yet it was by a Kāssite uprising and invasion that Ur was overthrown. This, however, only freed Elām from Sūmero-Akkadian control. It did not, at that time, give the Kāssi the mastery of the territories between the two rivers.

Next, we hear of the *Dynasty of Isin*—also Sūmero-Semitic—lasting for some 225 years, which apparently brings it down to *circa* B.C. 2056. It was founded by Isbi-Ura, and seems to have undergone many vicissitudes —much of its history still remaining unravelled. According to King, it possibly overlapped the commencement of the so-called *First Dynasty of Babylon;* but he dates its end approximately B.C. 2100, and prefers the view that it fell before the rise of the *Babylonian Monarchy.*

This last-mentioned event King dates *circa* B.C. 2050. Others put it earlier— even as early as B.C. 2232. Perhaps a way out would be to assign the founding of the *dynasty* to B. C. 2232, and the rise of *Babylon* to King's date, B.C. 2050. The founder of the dynasty was Sūmū Ābū: and it seems to have been somewhat later that the name Bābylon (*Bāb-Ilū*="Gate of EL") first appears in history, replacing *Tintir-Ki* and *Kā Dimir-Ra*="Place of Life"). Throughout this period—but especially during the reign of Khāmmūr-ābi—Kāssite activities were very daring and ubiquitous, particularly those conducted by Khūdūr-Mabūg, King of Elām, and his two sons, Rīm-Sin, or Rīm-Ākhū (King of Larsa), and Khūdūr-Lagamar, the Chedorlaomer of *Gen.* XIV. Indeed, for several years Khāmmur-ābi (the Amraphel of *Gen.* XIV) was a captive in the hands of the King of Elām, though he eventually regained his liberty and his throne. We need not, therefore, feel in the least surprised when, in *Gen.* XI, we read that in the period preceding the arrival in Haran (Rhodo-Leuko-Tūrānian Mitanni) of the originally Sūmerian "Aamū" community subsequently known as the '*Ibr*-Aamū, '*Abr*-Aamū, Abrāmū, or

Abrāmites (for "Abram," the patriarch, was merely **Ezra's** personification of this ethnos), Ur was commonly called "Ur of the Chaldees"; for that meant nothing more or less than "Ur of the people of Kaldā, Kardā, or Kasdā," *i.e.*, "Ur of the Kāssi."

Here, by way of an aside, I might insert an explanation of how these '*Abr*-Aamū federated with the Amorites of Māmrē, and became known as the *Khabiri* of Hebron; how—later on, as the *Hebrews*—they united with a half-Romic community in northern Khārū who had formerly sojourned in Khem, first as an Aamū sub-tribe, worshippers of a deified ancestress named *I-Sarah-El*, then, after amalgamating with the Romiū, as devotees of *Mes-Rā*, or the Zōdiacal *Abir*, or Young Bull, but, on the occasion of the so-called *Exodus*, had left Khem under imperial auspices, as the *Josephites*, *Mesrāyim*, *Abiri*, or *Israelites*, and settled in Khārū as a Pharaoh-protected Romic Colony; how, still later—but not till the 11th century B.C.—the ancient *Amorites of Yādāi*, then mostly in southern Khārū, astutely, for political reasons, proclaimed themselves as the *Beth-Yāhūdeh*, confederate with the half-Romic Colony in the north; how, in the meantime, these last-mentioned and the Hebrews, now together known as the Hebro-Israelites, had been incorporating into their political organism various outside ethnoi, largely European and Rhodo-Leuko-Tūrānian, and, when thus augmented and federated, called themselves distinctively the *Beth-Sākh*; and how, eventually, under David, *Beth-Sākh* and *Beth-Yahūdeh* erected themselves into a monarchical Union under the style of *Israel*: but it is too long and complex a story to tell here. Suffice it—even at the risk of perhaps startling some people out of their wits—to put on record the fact (so very different from the fairy-tale that we have always been taught to believe) that, ethnically, the Jews are neither

Hebrews nor Israelites; that they never took part in the Exodus; and that they never sojourned in Khem, whether in bondage to the Romic Pharaohs, or as free men. They are simply the ancient Amorites of Khārū, transformed—with a handful of Hittites thrown in, to modify the original stock (See *Ezek.*, *XVI*, 1, 2, 3, 45).

The *Babylonian Monarchy*, or so-called *First Dynasty of Babylon*, fell to pieces late in the 18th century B.C. Its endless struggles with the Kāssi, and possibly internal ailments of its own, had sapped its strength: but there seems to be no doubt whatever that, by both secret intrigues and open attacks, the Hittites (then subjects of the Mitannian *Hek-Khās-Khetū*) largely contributed to hasten its end. Ostensibly, perhaps, they were in league with the Kāssi; but there can be little question that, at the back of their minds, they had a very deep game of their own to play. Just then, however, the Kāssi proved too much for them.

Hitherto we have been taught to believe that in the founding of this renowned *First Dynasty of Babylon* and the rise of Babylon itself, we see a Revival of "Semitic" power and culture. And so, no doubt, we do: but not in the sense meant by King, Pinches, and the other authorities. For many long centuries before the momentous epoch under notice, the people of Agadē had been pure Semites, *i.e.*, Semites in the only sense of the word that can possibly be accepted. Otherwise stated, they had for ages been Near-Eastern Melano-Leukochroi, or Dark-Whites, of the pure blood. Into their midst—at least half a century, perhaps 1000 years or more, before the rise of Babylon—come a very different race, the semi-Rosy-Blond, semi-Xanthochroic Rhodo-Leuko-Tūrānians, who inter-marry with them and superpose upon them their very different ideals, institutions, and culture generally. A brand-new race, partaking of the characteristics of both the autochthonous Agadēan "Semites" and the in-coming Rhodo-Leuko-Tūrānians, and a brand-new culture expressing a blend of both contributory cultures, are the result. So far, it would be a misuse of language to describe this newly formed race and this newly arisen culture as "Semitic." But time goes on; and what happens? That happens which always happens in such circumstances. The Melano-Leukochroic autochthons were doubtless much more multitudinous than their masters and tutors. There was naturally a tendency for the race- and culture-characteristics of the latter to persist, and eventually to appear to dominate society as a whole, and for the distinctive race- and culture-characteristics of the Rhodo-Leuko-Tūrānian element to be gradually submerged in the general flood, and even eventually to appear to have died out. But reason tells us that it did not really die out. Reason tells us that the ethnic and cultural individuality of Babylon, after say B.C., 2050, was very different from what the ethnic and cultural individuality of Agadē had been before the advent of the Rhodo-Leuko-Tūrānians. It was not Rhodo-Leuko-Tūrānian, certainly: but neither was it Eastern Melano-Leukochroic, or "Semitic." It was a *complex combination of the two.* Assuredly it was not "Semitic" in the amazing sense taught by King, Pinches, and their followers. Shortly, it was *Babylonian*—a unique and absolutely new phenomenon. Where our authorities go astray is in imagining that the new-comers from the North (not the North-West) were Amorites, and in dubbing these Amorites—tall, long-headed *fair* folk, almost as rosy-blond as the Rhodo-Leukochroi themselves—"Western-Semites"!

Here it may be explained that, when the Amorites arrived in north Syria and settled along the valley of the Orontes, they had in their possession a divine name something like *Yā*, or *Yāhū*. The *ū* was probably only a subsequent Eastern Melano-Leukochroic, or possibly Babylonian, terminal for the nominative singular, and the *h* may have been inserted as a mediant between the two vowels—the *ā* of original *Yā* and *ū*—or for later mystical reasons. Where could this *Yā* have come from? Where but from the country from which the Amorites had originally come—Mediterranean *Yāvān*, the *ān*, *ānā*, *āni*, or *ēnē*, of the old Rhodo-Leukochroic divinity, IO? Thus the Amorite divine name may be taken to have exhibited the variants *Iō*, *Yō*, *Yaw*, *Yā*, *Yāū*, *Yāhū*, and finally *Yāh*. Now, curiously enough, after they had settled in the valley of the Orontes, we find them specially associated with a district or country named Ja-ū-di, Ja'di or Yādāi. What was this but the *dā*, *dāi*, *deh*, or "country," of *Yā*, or *Yāhū*? Thus we find that the real name of their country in Amorā (near later Samal), the correct form of the territorial name which has come down to us in the obscure form Ja-ū-di, or Yādāi, is *Yāhūdeh*, and that—apart altogether from the sudden *volte-face* on the part of Khem's hereditary enemies in Khārū, when, in the 11th century B.C., they cast in their political lot with the half-Romic Hebro-Israelites, or Beth-Sākh up in the north, and, uniting with them, founded the new Davidic State under Pharaonic suzerainty which was thenceforward historically known as *Israel*—these age-long intriguers had originally, in a long-forgotten past era, been entitled to the name of *People of Ja-ū-di*, *Ja'di*, *Yādāi*, or *Yāhūdeh*; and this diplomatic assumption by them of the name which has since gathered about it such very different associations (finally appearing as *Jews*), was merely the revival of an ancient and inherent right, a deliberate reversion to an old page in their life as an ethnos, which had for several centuries been turned down and suffered to pass into oblivion.

Ezra, however—for the glorification of *Yāhveh*—gave to his materials a very clever twist, which, until now, has completely covered up again all traces of the facts here disclosed.

In the form *Yāhū*, or *Yāū*, this ancient and once Mediterranean divine name may possibly have found its way into Agadē and Sūmer, first as borne along on the waves of Rosy-Blond migration that had issued out of Rhodo-Leukochroia and poured into Western Asia, and secondly in the days when the Rhodo-Leuko-Tūrānians superposed themselves upon Agadē; or it may have wandered into "Babylonia" from Amorā; for, in the texts, there do seem to be vague indications of some such divine name being obscurely known in those regions; but it is in no traceable way identifiable—or apparently even connected—with the old Sūmerian divine name *Ea*, "King of the Abyss, Creator of Everything, and Lord of All."

Meanwhile, far down in southern Sūmer, in the "Country of the Sea," there had been flourishing a dynasty—Semitic (*i.e.*, Near-Eastern Melano-Leukochroic), or perhaps Sūmerian, or possibly Sūmero-Semitic, I am not sure which—called the *Seskū Dynasty*. It was founded about Conventional B.C., 1884 by Ilūma-Ilū, a contemporary of Samsū-Ilūna of the *Babylonian Monarchy*, and collapsed in B.C., 1526 under Ea-Gamil, who was overthrown by Ulām-Būriash, an Elamite prince, son of Būrna-Būriash "the king." Ulām-Būriash thereupon took possession of Ea-Gamil's realm. By thus establishing himself in the extreme south, he merely revived what had previously existed there at Ur (Ur of the Chaldees), *circa* B.C., 1996-1921, *i.e.*, Kāssite dominion. For a long time scholars did not know what to make of the period that succeeded the downfall of the Babylonian Monarchy, or First Dynasty of Babylon, as it used to be called. Vaguely they spoke of a pall of comparative obscurity which at that epoch swept mist-like over the history of the land between the two rivers. The Seskū Dynasty, just referred to, had as yet been neither identified nor placed; but, in the Kings' List, mention was found of a dynasty of eleven kings, beginning with a certain Anmanū, and described as of *Urū-azagga*. As, however, this was also read *Urū-kū*, everybody was left guessing, and all sorts of conjectures were started to explain who the mysterious eleven were—Hommel's being prominent and to the effect that the dynasty was contemporaneous with that of Khāmmūrābi, but for some obscure reason had never attained significance. Throughout this period of bewilderment, scholars were in the habit of calling this dynasty the *Second Dynasty of Babylon*—the Kāssite dynasty, next to be noticed, being generally referred to as the *Third Dynasty of Babylon*.

However, consequent upon what we now know about the Seskū Dynasty, all these styles—First, Second, and Third of Babylon—have been discarded; for the Seskū Dynasty had nothing whatever to do with Babylon, and Mr. King, who seems to know most about the subject, is satisfied that, after an indefinite but not very long interval, the Babylonian Monarchy, which used to be called the First Dynasty of Babylon, was succeeded by that Kāssite dynasty which used to be called the Third Dynasty of Babylon. It was founded by a Napoleonic conqueror, named Gandash, who issued out of the country known as Kāshshū. It represented a mighty up-rush of Kāssite ascendancy, which was now undoubted and ubiquitous in that part of the world. The seat of its power was established at Nippūr—Babylon being thenceforward known during Kāssite times as *Kardūniash*. It was contemporary with the famous 18th Pharaonic Dynasty in Khem; endured for no less than 577 years; made

Babylonian Culture a dominant factor throughout the civilized world, as then known; and only succumbed before the irresistible and rapidly augmenting might and majesty of Assyria.

Here, however, I must close. In my next paper I shall revert to the subject of Babylonian Culture, I shall try to show that, at any rate to some extent, its origin goes back to Rhodo-Leuko-Tūrānian sources; and further that, if that can be established, the conclusion necessarily follows that, both formally and functionally, its earliest biological beginnings were really rooted in the life of those two now only mythologically and nebulously remembered stages of remotest Antiquity—the majestic, beautiful, and dazzlingly brilliant Rhodo-Leukochroic Age of the old, old Mediterranean World, and its quite as wonderful, even more mysterious, and still more ancient predecessor, the Melano-Leukochroic Age of that same old World. I shall touch upon Assyrian, Medic, and Persian origins, noticing the debt each of these ethnoi and States owed to the Rhodo-Leuko Tūrānians in respect of culture; and, passing on to Airyavō-Vaēja (whence the Āryas immediately originated), I shall point out how and to what extent the Airyānians there were probably affected by all the ethnic and cultural streams that, in the now thoroughly metamorphosed Orient, must then have been circling around them; and finally, with a glance at Romic history in the 12th century B. C. (really to throw light on subsequent events in Central Asia), I shall invite attention to the fact that then, and only then, 5 *janāhs* named in the *Rig-Veda* as the Pūrūs, Yādūs, Tūrvaśas, Anūs, and Drūhyūs—of whom the first two abandoned Nāharīn in Western Asia under the names Pūra-Satiū and Yādāi-Amorites—arrived first in Zarah-Lake land (modern Seistān), where the *śūkla* Āryas were then settled, and later on (but for the first time in their lives) appear as at least camped in trans-Indus Sapta-Sindhavaḥ (modern Panjāb), where no denizens were then to be found more civilized than the assorted *Niṣādas*, and the hardly more advanced Indian Tokhs, Tūshi, or *Dasyūs*, who, under their *kārūs*, or tribal chiefs, had dwelt there for centuries, but who, up till then, knew no more about Āryan humanity, Āryanism, and the Ṛig-Veda, than they did about the differential calculus—for, outside certain shadowy names, there is no evidence of the *śukla* Āryas having ever entered the Panjāb; and then—but not till then—we shall be in a position to decide for ourselves in what sense, and how far, if indeed at all, the particular communities heretofore and still usually called "the Rig-Vedic peoples," "the Āryan folk," and "the Indo-Āryans," the particular collection of doctrines, myths, and ideals usually called "the teachings of the Vedas," and the particular period that is commonly spoken of as "Ṛig-Vedic times," and "the Rig-Vedic Age," are really entitled to the views that are prevalent regarding them, not only in popular belief, but also in scholarly circles both Indian and European.

Primitive Elements of Jainism [1]

BY

PRABODH CHANDRA BAGCHI, M.A.

(1) *Introductory.*

"There is no religious system, ancient or recent," says Mrs. Emile Durkheim,[2] "where one does not meet under different forms, two religions, as it were, side by side, which, though being united closely and naturally penetrating each other, do not cease, nevertheless, to be distinct." The one is concerned with the magnificent phenomena of nature such as the sun, the moon, winds and stars, or else the objects of various sorts such as plants, animals, etc. The other is concerned with spiritual beings, spirits, souls and demons and divinities. Of these two elements one pertains to a higher state of culture and is the outcome of the progressive state of mind and the other belongs to a lower stage of culture and sadly lacks that sublime character. The former finds support in the standardised canonical literature and the latter in the traditions and blind superstitions fondly entertained by the uncultured mass.

Every Indian religion also has two such aspects and Jainism is no exception. But here the two phases have been intermixed with each other so much so that one finds difficulty in separating one from the other. The inferior element has received a religious sanctity at the hands of the people inspite of its unauthoritative character. The present humble attempt is, however, made to discover the lower characteristics of the Jaina religion and to investigate into the probable conditions under which they were incorporated into Jainism. Here I shall, first of all, try to find out whether there is any primitive element in the Jaina philosophy. The religious rites and superstitions of the Jainas, and their mythology, will be taken into consideration in due order and attempts will be made to discover the possible folk elements of them.

---

[1] This article is the elaboration of a paper read in the Anthropological Section of the Indian Science Congress at its Eighth Annual Session in February 1921.

[2] Mrs. Emile Durkheim in her "The Elementary Forms of the Religious Life," p. 48.

(2) *Philosophy.*

The most vital question of philosophy is concerned with the conception of the soul, and the connected topic, the idea of the transmigration of souls. These are again the only points of philosophy regarding which both the cultured and the uncultured have got views of their own. This, therefore, appears to be the only possible category in which we can expect to discover the trace of animistic influence, if there is at all any, on the philosophical system of the Jainas.

In the Jaina philosophy, soul is generally represented by *jīva*. It is one of the nine categories which constitute the fundamental truths of the system. The *jīva* is characterised by the possession of the four *prāṇas*—life-breaths as well as of the consciousness. It is described as formless, and an agent, has the same extent as its own body, and is the enjoyer of the fruits of *Karma.*

Now the most noteworthy point regarding this conception of soul, as Professor Jacobi[1] rightly indicates, is that it has been arrived at not through the search after the self, the self-existing unchangeable principle in the ever-changing world of phenomena, but *through the perception of life.* This is because the most general Jaina term for soul is life—*jīva*, which is identical with *āyā* or *ātman*; and the way in which the category of *jīva* is divided and sub-divided building up from the less to the more developed life certainly bears out this contention.

---

[1] S. B. E., XXII, p. 3.

This category of *jīva* has been classified in every possible way in the Jaina philosophy. Once it has been classified in five ways according to the number of senses it possesses as *Ekendriya*, *Deindriya*, *Tri-indriya*, *Corendriya* and *Pañcendriya* or in other words that which possesses one sense, that which possesses two senses and so on.

The inanimate world is concerned with this *Ekendriya* class. "*Ekendriya jīva* possess only one sense, the sense of touch but have four *prāṇa*: touch, body, the power of exhaling and inhaling, and the allotted term of life.

"They are sub-divided into *Prithvikāya*, *Apakāya*, *Teukāya*, *Vāyukāya*, and *Vanaspatikāya*. Things belonging to the earth, such as stones, lumps of clay, salts, chalk, diamonds and other minerals, are called *Prithvikāya ekendriya*. Though ordinary persons are unable to perceive in these the power of suffering, yet a *kevalī* can do so, for he sees that they have four *prāṇa*, including the power of breathing and of touch. The longest span for which a *jīva* can be compelled to inhabit such a lodging is twenty-two thousand years, and the shortest time less than forty-eight moments, but as the *jīva's* karma is gradually exhausted it will be reborn into happier conditions. These earth-lives are also divided into those which we can see and those which are invisible to the human eye. *By ill-treating any earth-life we deprive ourselves of our chance of happiness and perfect wisdom.*

"The Jainas believe that water itself (*not, as is so often supposed, the animalcule living in it*) is inhabited by *Ekendriya jīva* called *Apakāya Ekendriya, Apakāya* include rain, dew, fog, melted snow, melted hail, etc. The shortest span a *jīva* can pass in water is a moment, though more usually it will have to wait there for rebirth for at least forty-eight moments; but the longest time its karma can condemn it to this imprisonment is seven thousand years. *It is this belief in the power of inflicting pain on water that makes Jaina monks so particular* about only taking it when it has been boiled and strained and prevents some of them using it at all for toilet purposes!

"*A man's karma again may force him to become a Teukāya ekendriya*, or fire-life, and he may have to pass into an ordinary fire, the light of a lamp, a magnet, electricity, a meter, flintstone sparks, a forest conflagration, or a submarine fire, but one can only be condemned to be a fire-life for a period varying from one instant to three days (*i. e.*, seventy two hours). A difference of opinion exists among Jainas as to whether one can be condemned to become lightning or not for it does not seem to be known for certain whether or no Teukāya exists in lightning.

"Again all sorts of wind, such as cyclones, whirlwinds, monsoons, west winds, and trade winds, are thought of as inhabited by what are called *Vāyukāya Ekendriya jīva*. It is difficult for us to understand that wind has a body and can be made to suffer pain, but all this is plain to a *Kevali*. The period a *jīva* may spend as wind varies according to his *karma* from one instant to three thousand years.

"All vegetable life or *Vanaspatikāya*, also possesses but one *indriya*. These *jīvá* are divided into two classes: *Pratyeka*, or life such as that of a tree (*e. g.*, an orange or mango tree), whose various branches, fruits and leaves possess life derived from it and *Sādhāraṇa*, the life possessed by potatoes, onions, carrots, figs, etc. Strict Jainas will not eat any of the latter class because more than one *jīva* has taken up its lodgings there; but they will take oranges and mangoes, once they are ripe, for then they are inhabited by only one life. Life as a vegetable may last from one instant to ten thousand years."[1]

The points which are extremely significant here are these—(*a*) it is maintained and maintained very strongly that *Ekendriya jīvas* inhabit the elements above enumerated. (*b*) It is to be particularly noted that the Jaina's belief in the existence of life in these elements is not at all concerned with the animalcules living therein as is so often presumed. (*c*) A man's *karma* may force him to take some such elemental existence in course of transmigration; and furthermore, (*d*) it is strictly enjoined that any ill-treatment to these elemental lives are detrimental to one's attainment of happiness and perfect wisdom. So says the *Achārāṅga sūtra*[2]: "He who injures these does not comprehend and renounce the sinful acts, he who does not injure these comprehends and renounces the sinful acts." It thus appears that the Jainas are very emphatic in the attributing souls to inanimate things such as stocks, stones, lumps of clay, salts, chalk, diamonds and other minerals; rain, dew, fog, melted snow and hail; fire, light, magnet, electricity and meteor; vegetables, trees and fruits.

Now this liberality in the attributing souls to inanimate objects has its counterpart in a lower stratum of culture. It is only in the animistic *fond* of human thought that "there is recognized in nature no aristocratic class of soul-possessing of soul-possessing beings—everything dignified by thinghood—has its own power or function, however insignificant, and therefore its own soul."[1] Professor Tylor also in his Primitive Culture[2] maintains that "Plants partaking with animals the phenomena of life and death, health and sickness, not unnaturally have some kind of soul ascribed to them. In the lower ranges of culture the souls of plants are much more identified with the souls of animals." But in these lower ranges of culture only, he speaks furthermore, that the theory of souls stretches beyond this thought. Certain high savage races distinctly hold, and a large proportion of other savage and barbarian races make a more or less close approach to a theory of separable and surviving souls or spirits belonging to stocks and stones, weapons, boats, food, clothes, ornaments, and other objects which to us are not merely soulless but lifeless.

---

[1] Mrs. Sinclair Stevenson in "Heart of Jainism," pp. 97, 98, 99.

[2] Ācharāṅga Sutra, S. B. E.

It thus becomes apparent that the Jaina conception of soul had much to do with the conception of the people at a lower stage of culture at the outset, though it has now been completely incorporated to the Jaina philosophy.

The connected topic of the doctrine of the transmigration of souls, has received its full development in Jainism. It is maintained that the *jīva* performs different kinds of actions, "it reaps the fruit of those actions and it circles round returning again." As a result of the influx of *karmas* as already indicated, the *jīvas* are sometimes forced to take up their abodes even in the earth-bodies, fire-bodies, water-bodies and the rest. The souls are also sometimes forced to inhabit the bodies of animals if the result of their past *karmas* requires so. This is best illustrated by the prenatal history of Pārśvanātha[3] in which his evil antagonist Kamaṭha is represented as being born once as a *Kurkuta*-serpent for murdering his pious brother Marubhūti and committing incest with his sister-in-law. The soul of this *Kurkuṭa*-serpent was reborn twice again as a great serpent (*mahāhi*) and a lion for his mischievous act in previous lives. Pārśvanātha also is depicted as being born as an elephant in one of his previous existences for harbouring distressing thoughts (*ārtadhyāna*).

---

[1] Encyclopædia of Religion and Ethics; Article on Animism.

[2] Professor Tylor in "Primitive Culture," Vol. 1, p. 474.

[3] Prof. Maurice Bloomfield in his "The Life and the Stories of the Jaina Savior Pārçvanātha," *cf.* Introduction, p. 4 ff.

There can be no doubt that this Jaina idea of transmigration is an exact prototype of that idea in lower psychology " which draws no definite demarcation between souls of men and of beasts " and which finds no difficulty in admitting the migration of human souls into the bodies of the lower animals and also inanimate things. Thus it appears to us that the Jaina idea of this transmigration of souls was affected to a great extent by the animistic philosophy and was polished and refined later on.

We cannot but notice another aspect of this question, namely, that magic process by which the transference of soul from one body to another body can be accomplished. The sacred literature of the Jainas bears record of such magic processes. Thus we are told,[1] in connection with the sixth pre-birth of Pārśvanātha as King Vajranābha, that King Vikrama of Avanti learnt this magic process and transferred his soul from his own body to that of the state elephant, thence to that of a parrot and at last in order to come back to his own body he had to transfer his soul to the body of a lizard. It is to be remarked that in this process of transference the original qualities of the soul were not in the least affected. King Vikrama, thus, even after his entrance into the body of the parrot instructed the queen "on the essence of religion in accordance with the familiar teaching of the Jaina vows," winding up with the superiority of mental purity as compared with ascetic practice.

---

[1] Prof. Maurice Bloomfield in " The Life and the Stories of the Jaina Savior Pārçvanātha," p. 74 ff.

The belief in this magic process of the transference of souls, every one is quite sure, lacks that sublimity of conception which is the characteristic feature of the higher phase of Jainism. This appears to be one of those peculiar beliefs which are entertained by the people at a lower stage of culture.

(3) *Religious Rites and Superstitions.*

I now come to some of the religious rites and superstitions entertained by the Jainas. Though these do not all constitute a special feature of Jainism alone, many of them being common to both Hinduism and Buddhism, it is the Jainas who look up to these with especial religious sanctity. Moreover, Mrs. Sinclair Stevenson in her valuable handbook on the Heart of Jainism[1] enumerates most of them as peculiarly Jaina. These, therefore, appear to deserve consideration.

The *Caitya-worship* was prevalent among the Jainas from the very beginning. Nay, it is not improbable, as Prof. Ramaprasad Chanda has indicated in one of his recent lectures[2] on Eastern Art, delivered in the Indian Museum, that this was in existence even before the birth of those religions, Jainism and Buddhism. "This belonged to the primitive effortless stratum of society," says he, "and not patronised by the progressive sections who with their pantheistic or agnostic tendencies could not fully reconcile themselves to idolatry. These sections worshipped and maintained the *caityas* because it was their custom to do so from time immemorial and when they got hold of some higher objects of worship like Buddha they made the presiding spirits of the *caityas* like Yakṣas, Nāgas, and Devas to fall in line with their old worshippers" and adopted the new faiths.

---

[1] Heart of Jainism, p. 264 ff.

[2] Published in the Journal of Letters, Calcutta University.

Evidently, therefore, there can be no denying the fact that this *caitya* worship as practised among the Jainas, originally belonged to a lower stage of culture and was incorporated into Jainism later on.

The prevalence of the *caitya* worship among the Jainas can be estimated from a short description of it in the Antagaḍa-Dasāo,[1] one of the Jaina canonical works which runs thus:

Outside the city of Campā, to the north-east thereof, was a sanctuary named Punnabhadde......Its fame was widely spread among many populations of town and country. It was meet for the prayers and supplications of many playful folk; meet for worship, celebration, veneration, offering, largesse, and respect; meet to be waited upon with courtesy as a blessed and auspicious sanctuary of the gods, divine, truth-telling, truth-counselling. Miracles were manifested therein and received shares in thousands of sacrifices. Many people came to worship it.

The evil eye.—"The ordinary people among the Jainas believe most strongly in the evil eye and are terrified of coming under its influence though it is quite contrary to the tenets of their creed." Mrs. Sinclair Stevenson [2] tells us that the Jainas are generally scrupulous to receive perfect happiness with open heart, and furthermore whenever they see it, they believe that some person who is a favourite with some evil god or goddess will harm the happy one through jealousy. Anything dark or bitter is considered as capable of averting this and so, if new jewellery is worn, a black thread is tied on to it; if a new house is built a black earthen vessel is placed outside.

---

[1] Antagaḍa-Dasāo—Barnett, p. 2 ff.

[2] "Heart of Jainism," p. 265.

Any illness is ascribed to this influence of the evil eye. "If a child has fever or is sick after eating, the women at once say that its illness was caused by some person possessing the wicked power of the evil eye and elaborate remedies are taken." The remedies prescribed are of very queer kinds, *e.g.*, to wave a loaf of millet bread round his head and to give to a black dog.

Evil spirits.—The *bhūtas* or the evil spirits are generally considered very active at the time of *Divāli* and in order to prevent their entrance to houses the women before the *Divāli* go to some crossing places of three or four roads with water pots. They make a circle in the dust with the water and in the centre of this place a small cake of grain. "Indeed at any season when they are afraid of evil spirits visiting their house, they put vermilion, grain, and something black into the bottom of a broken pot to guard against their coming."

Ancestor-worship.—"Srāvaṇa is in fact an anxious month, and on the fifth day of it many Jaina women worship serpents, apparently to propitiate the spirits of their ancestors. They draw a picture of a snake on the walls of the room where the water-vessels are kept, in order to pacify the spirit of any of their forefathers who may have died suddenly in battle or been murdered before he could fulfil some strong desire he might have possessed; for they fear that such ancestors may return to carry out their interrupted purpose. To cool these desires, they encircle the picture of the snake three times with water and offer it little cakes to make it happy."[1]

---

[1] *Ibid*, p. 266.

Plague and small-pox.—The prevalence of cholera or plague is attributed to the influence of vindictive gods and goddesses like Śītalā Devī. In order to obviate their influences the ordinary Jaina lights a fire in his house and circumambulates it. When one is attacked with small-pox, he goes to the temple of Śītalā and makes various kinds of offerings to the vindictive goddess in order to propitiate her.

These are a few of the superstitions entertained by the ordinary Jainas. No one and not even the most advanced Jainas can venture to characterise these as the products of a progressive culture. Nor are they justified in distinguishing these as consistent with the injunctions of their sacred law. These beliefs in the "activity of countless swarms of spirits" and these tendencies to make them responsible for any sort of mishap or disease have never been considered by the anthropologist as the properties of a completely cultured man who tries to discover the real causes acting behind the veil. These are notions favourite to the people at a lower stratum of culture—the people who have neither the capacity nor the inquisitiveness to find out the underlying causes of a phenomenon but are satisfied with attributing them to some supernatural agencies. We therefore find no other room left for us than to take these as religious conceptions originally belonging to a lower stage of culture and now dynamically incorporated into the society of the cultured.

(4) *Mythology.*

Lastly I come to the Jaina mythology. It will be interesting to estimate the nature of the folk contribution to it. But this is a task difficult and requires a prolonged study. For the present I shall remain satisfied in giving a mere outline of the subject.

Serpents play an important part in the **Jaina mythology.** In the legends which centre round **Pārśvanātha,** the twenty-third Tirthaṅkara, the main actors are **sometimes** the great Nāgas. Thus when Sambaradeva **or Meghakumāra** along with his satanic host attacked our **great** Arhat with storms when he was engaged **in severe** austerities—standing unmovable and exposed to the weather—it was Dharaṇendra, the King of **Nāgas** in the region of Pātāla, who came to his rescue. His mighty throne is said to have been shaken at the time of this danger and perceiving the difficulty of the great Jina he came along with his queen consort *Padmāvatī* and spread his innumerable hoods over the head of our Arhat. The legend is also depicted on sculptures in the cave temples at Badami and Elura and the image of Pārśva is generally carved with the snake-hoods (*Śeshaphaṇi*) over him.[1] In several other temples, again, Pārśvanātha is depicted as lying in the Kāyotsarga position attended by snake divinities. Besides we are told that when the Bhagavān Pārśvanātha was in the embryo the mother saw a serpent by her side on the bed and this was why he was called Pārśvanātha.

Gods are again divided into four classes and the first two divisions appear to be noteworthy. The first division, the Bhāvanādhipatis, consist of ten orders of beings.[2]

(*i*) *Asura-Kumāras*—who are black in colour, wear red garments and bear on the crown a great crescent-shaped jewel.

(*ii*) *Nāga-Kumāras*—who are white in colour, wear green garments and bear the symbol of a serpent's hood on the crown.

---

[1] Bühler in his "Indian Sect of the Jainas," translated by Burgess, pp. 63, 64.

[2] *Cf. ibid*, p. 73.

(iii) *Suvarṇa-Kumāras*—who are yellow in colour, wear white garments and bear the symbol of an eagle on the crown.

(iv) *Vidyut-Kumāras*—who are red in colour, wear green garments and bear the symbol of a thunderbolt on the crown.

(v) *Dvipa-Kumāras*—who are red in colour, wear green garments and bear the symbol of a lion on the crown.

(vi) *Udadhi-Kumāras*—who are white in colour, wear green garments and bear the symbol of a horse on the crown.

(vii) *Dik-Kumāras*—who are red in colour, wear white garments and bear the symbol of an elephant on the crown.

(viii) *Pavana-Kumāras*—who are green in colour, wear red garments and bear the symbol of a crocodile on the crown.

(ix) *Agni-Kumāras*—who are red in colour, wear green garments and bear the symbol of a jug on the crown.

(x) *Savita-Kumaras*—who are yellow in colour, wear white garments and bear the symbol of a shallow earthen pot on his crown.

The second division, the *Vyāntaras* consists of eight classes all of which are considered in the Brahmaṇical mythology either as demigods or supernatural beings. These are—

(i) *Piśācas.*
(ii) *Rākṣasas.*
(iii) *Mahoragas.*
(iv) *Bhūtas.*
(v) *Kinnaras.*
(vi) *Gandharvas.*
(vii) *Yakṣas.*
(viii) *Kimpuruṣas.*

These demons of various classes have all trees as their symbols, "*Piśāca* are black-bodied, and have a Kadamba tree as a symbol; *Bhūta* whose sign is the Sulasa tree, are also black-bodied; so are *Yakṣa* who possess the Banyan tree as their sign; *Rakṣasas* are white and have the Khaṭamba tree; the green *Kinnara* have the Asoka tree; the white *Kimpuruṣa* the Campaka tree; the Nāga or snake tree is the symbol of the black-bodied *Mahoraga*; and the last of the Vyantara demons, the black *Gandharva* have the Ṭīmbara tree for their sign."[1]

The gods described under both the divisions are all considered to be dwellers of the region of Pātāla. They have their divinely qualities.

The *Yakṣas*, the third class of the Vyāntaras are so much so associated with the activities of human beings that they have been taken in many of the legends. It is the Yakṣas and Yakṣinis who have been always connected with all the 24 Tirthankaras as their attendant spirits. Thus Ṛisabhadeva, the first Tirthankara had Gomukha and Chakreçvarī as his male and female attendants and Mahāvīra, the last, even had Mātaṅga and Siddayika. Each one of the intermediate Tirthankaras also have been connected in the similar way with Yakṣas and Yakṣinis. The pre-natal history of Pārśvanātha had also much to do with the Yakṣa divinities. Furthermore the Jaina worship of *Caityas* is fundamentally connected with these denizens of the region of Pātāla. Maṇibhadra and Purṇabhadra stand pre-eminent among these.

This demonology, if looked at from the standpoint of an anthropologist, appears to be the contribution of the uncultured and partially developed mentality.

---

[1] Mrs. Sinclair Stevenson in her "Heart of Jainism," p. 269.

(5) *Conclusion and Probabilities.*

This is all I have to say regarding the primitive elements of Jainism for the present. Now it may be asked what is the probable channel through which these religious conceptions of the uncultured folk could enter into Jainism?

Pārśvanātha, there are reasons to believe, was the first historical promulgator of the religion. He flourished towards the end of the 9th century B.C. and evidently his age was coeval with the age of the elder Upaniṣads when the thoughtful section of the community in their zeal for the knowledge of the supreme world left the suffering masses to shift for themselves.

It may be rightly presumed that at this juncture Pārśvanātha recognised the moral elevation of the mass as a supreme task of religion. He felt for them and came forward to their help. This is why he has been always styled the "people's favourite." Probably it implies that Pārśvanātha's religious propaganda were started for the uplifting of the masses. It is also noteworthy that the mass of that time, in the eastern countries of Āryavarta, to which Pārśvanātha's religious propaganda were confined, most probably was constituted with the peoples at a lower stratum of culture.

Pārśvanātha's movement, presumably *the first organised popular religious movement*, was thus more concerned with the uncultured section of the community than with the higher classes. It was rather antagonistic to these privileged classes as it was the first to stand in the way of their self-interests as it did away with all class distinctions and social aristocracy. As this movement started with the lower section of the society it appears to us that this was the channel through which religious ideas and conceptions which are naturally entertained by the people of a lower culture entered into Jainism and succeeded in being existent up till now.

Furthermore, in every religion, the conversion of peoples either cultured or uncultured, necessitates the incorporation of some of their favourite religious beliefs. At least in course of time such a conversion results in this. Jainism also might have shared the same fate and with the conversion of the uncultured masses, the filtration of their peculiar religious beliefs also might have begun.

তৃতীয় অধ্যায়।

অদ্বৈতবাদে জগৎ কি মিথ্যা ?

আমরা এই অধ্যায়ে আর একটা গুরুতর বিষয়ের আলোচনা করিব। অনেকে এই একটা ধারণা পোষণ করিয়া আসিতেছেন যে, শঙ্করাচার্য্যের অদ্বৈতবাদে জগৎকে অসত্য, মিথ্যা বলিয়া উড়াইয়া দেওয়া হইয়াছে। এই যে আমরা নগ-নদাদিসঙ্কুল বিচিত্র জগৎ দেখিতেছি ; এই যে আমরা প্রতি নিয়ত সুখ-দুঃখ হর্ষ-বিষাদাদি অনুভব করিতেছি,—এ সকলই মায়াময়, অসত্য, অলীক। সকলই ভ্রান্ত-প্রতীতি মাত্র। একমাত্র ব্রহ্মই সত্য, আর সবই অসত্য। অনেকের চিত্তে, পাষাণে অঙ্কিত রেখার ন্যায়, এই সংস্কারটা, এই ধারণাটা, বদ্ধমূল হইয়া পড়িয়াছে। শঙ্করাচার্য্য নাকি, তাঁহার অদ্বৈতবাদে ইহাই শিক্ষা দিয়া গিয়াছেন! এখন আমরা এই কথাটা ঠিক্ কিনা, প্রকৃতই শঙ্কর এই জগৎটাকে অলীক, মায়াময়, অসত্য বলিয়া উড়াইয়া দিয়াছিলেন কিনা,—তাহাই পরীক্ষা করিয়া দেখিতে অগ্রসর হইব। শঙ্করাচার্য্য স্পষ্টবাক্যে, অনেক স্থানে জগৎকে অসত্য, মিথ্যা, অসার, মায়াময় বলিয়া নির্দ্দেশ করিয়াছেন, দেখিতে পাওয়া যায়। কিন্তু তিনি কি ভাবে এই শব্দ গুলির ব্যবহার করিয়াছিলেন, তাহা পরীক্ষা করিয়া দেখা নিতান্তই আবশ্যক।

(১) কিন্তু এই বিষয়টার পরীক্ষার পূর্ব্বে, আমরা একটী তত্ত্ব পাঠক-বর্গের মনে জাগাইয়া দিতে ইচ্ছা করি। আমরা পূর্ব্বে দেখাইয়াছি যে, দর্শনশাস্ত্রে "কার্য্য ও কারণ" শব্দটী পুনঃ পুনঃ ব্যবহৃত হইয়াছে। "কারণ" শব্দটা দর্শনশাস্ত্রে দুই অর্থে ব্যবহার করা হইয়া থাকে। বস্তু বা জীব হইতে অভিব্যক্ত ধর্ম্ম বা বিকারগুলি, এক অবস্থা হইতে অবস্থান্তর ধারণ করিয়া

থাকে। বিকার গুলির প্রকৃতিই এই প্রকার। পূর্ব্ববর্ত্তী অবস্থা বিনষ্ট হইলে, পরবর্ত্তী অবস্থায় পরিণত হয়। এই পূর্ব্ববর্ত্তী অবস্থাকে 'কারণ' শব্দে নির্দ্দেশ করা যায়। জড়-বিজ্ঞান ও মনো-বিজ্ঞান এই অর্থেই 'কারণ' শব্দটাকে ব্যবহার করিয়া থাকে। শঙ্করাচার্য্য অতি স্পষ্ট কথায় আমাদিগকে বলিয়া দিয়াছেন যে, তিনি তাঁহার ভাষ্যে কোথাও, এরূপ অর্থে 'কারণ' শব্দের ব্যবহার করিবেন না। বস্তুই বল, আর জীব বল, বা ব্রহ্মই বল,—সকলেরই এক একটা 'স্বভাব' বা 'স্বরূপ' আছে।[*] এই স্বভাব হইতেই কতকগুলি ধর্ম্ম বা গুণ বা ক্রিয়ার অভিব্যক্তি হইয়া থাকে। অবশ্য, এই ধর্ম্ম বা গুণ গুলি পুনঃ পুনঃ রূপান্তর ধারণ করে; এক অবস্থা হইতে অপর অবস্থা গ্রহণ করে। পূর্ব্বাবস্থা বিনষ্ট হইয়া, বর্ত্তমানাবস্থায় আইসে। শঙ্কর বলিয়াছেন যে, যে স্বরূপ হইতে ঐ সকল ধর্ম্ম বা গুণ উৎপন্ন হইতেছে; সেই স্বরূপটা, সকল অবস্থান্তরের মধ্যেই আপনার স্বরূপ, আপন একত্ব, বজায় রাখে। পূর্ব্বাবস্থা নাশের সঙ্গে, ঐ স্বরূপটা বিনষ্ট হয় না। পূর্ব্বাবস্থার মধ্যেও ঐ স্বরূপটা অনুগত ছিল; আবার বর্ত্তমানাবস্থার মধ্যেও সেই স্বরূপটাই অনুগত রহিয়াছে। শঙ্কর বলিয়া দিয়াছেন যে, তিনি এই স্বরূপটাকেই 'কারণ' শব্দে নির্দ্দেশ করিবেন।[†] এই 'কারণের' যত অবস্থান্তরই হউক্ না কেন, উহা কোন অবস্থান্তরের মধ্যেই নিজকে হারায় না; উহার স্বাতন্ত্র্য ও একত্ব (Identity) ঠিক থাকে।[‡] তিনি এই স্বরূপ বা স্বভাবটাকেই 'কারণ' বলিবেন। এই নিয়ম স্থির করিয়া লইয়া, শঙ্করাচার্য্য এই 'কারণ' এবং ইহা হইতে অভিব্যক্ত কার্য্য বা বিকার বা ধর্ম্মগুলির মধ্যে 'সম্বন্ধ' কিরূপ

---

[*] স্বরূপস্থ অনপায়িত্বাৎ। তচ্চ একরূপং বস্তুতন্ত্রত্বাৎ। একরূপেণ চ ব্যবস্থিতো যোঽর্থঃ, স পরমার্থঃ"।—শঙ্কর। আর একটা কথা এস্থলে বলা কর্ত্তব্য। এই 'স্বভাব' কে যেমন শঙ্কর 'কারণ' শব্দে নির্দ্দেশ করিয়াছেন, অন্যস্থলে ইহাকে 'সৎ' শব্দে এবং 'সামান্য' শব্দেও নির্দ্দেশ করিয়াছেন।

[†] নাসৌ উপমৃদ্যমানা পূর্ব্বাবস্থা, উত্তরাবস্থায়াঃ 'কারণ' মভ্যুপগম্যতে। অনুপমৃদ্যমানানামেব অনুযায়িনাং (Identity) বীজাদ্যবয়বানাং অঙ্কুরাদি-কারণভাবাভ্যুপগমাৎ" (ব্রহ্মসূত্র; ২।২।২৭)। "জাগ্রৎ-স্বপ্নয়োঃ পূর্ব্বাপরকালয়োঃ ইতরেতর-বিচ্ছেদঃ; ন তু তৎস্থস্যৈব ভাবান্তরোপজননং" (বৃ ভা°) ইত্যাদি।

[‡] "ন চ অবস্থাবতঃ অবস্থান্তরং গচ্ছতঃ নিত্যত্বং উপপাদয়িতুং শক্যং"। "পর্য্যায়েন ত্রিস্থানত্বাৎ… স্থানত্রয় ব্যতিরিক্তত্বং একত্বঞ্চসিদ্ধং" (গীতা ১৩ and মা° ভা°)

তাহার আলোচনা করিয়াছেন। আমরা দেখিতে পাই, তিনি এই সম্বন্ধটা বুঝাইবার জন্য বেদান্তদর্শনের একটা সমগ্র 'পাদ' ব্যয়িত করিয়াছেন।* এত পরিশ্রম তিনি কেন করিলেন? এই বিকারগুলি, ধর্ম্মগুলি, ক্রিয়া ও গুণ গুলি যদি তাঁহার মতে 'মিথ্যা,' 'অলীক' 'অসত্যই' হয়; তাহা হইলে, একটা অলীক বস্তুর সম্বন্ধই বা কিরূপে হইবে এবং সেই তথা-কথিত সম্বন্ধ নির্ণয়ের জন্য তিনি শ্রমই বা কেন করিতে গেলেন? তিনি নিজেই এই মন্তব্য প্রকাশ করিয়াছেন যে,—

"দুইটা বস্তুই যদি অলীক হয়, তাহা হইলে, সেই দুই অলীক বস্তুর মধ্যে পরস্পর কোন সম্বন্ধ হইতে পারে না। আবার যদি, একটা অলীক বস্তু; আর, অপরটী সত্য বস্তু;—এইরূপ হয়; তাহা হইলেও, উভয়ের সম্বন্ধ হইতে পারে না। পরস্পর সম্বন্ধ (Relation) হইতে হইলেই, দুইটা বস্তু (Two related terms) আবশ্যক; এবং এই দুইটা বস্তুই সত্য হওয়া চাই"†।

(২) আমরা এই জগৎটাকেই সর্ব্বদা আমাদের ইন্দ্রিয়-পথে বিস্তারিত দেখিতে পাই। অসংখ্য নাম-রূপাত্মক বিকার লইয়াই এই জগৎ। এই বিকারগুলিকে আমরা দেশে ও কালে অভিব্যক্ত দেখিতে পাই। বিকার-গুলি সর্ব্বদা পূর্ব্ববর্ত্তী একটা অবস্থা ত্যাগ করিয়া, পরবর্ত্তী অপর একটা অবস্থান্তর গ্রহণ করিতেছে, দেখিতে পাই। এইরূপে ইহারা পরস্পর কার্য্য-কারণ-সূত্রে আবদ্ধ হইয়া ক্রিয়া করে। সুতরাং আমরা এই নামরূপাত্মক জগৎকে, এই বিকার-গুলিকে স্বাধীন, স্বয়ংসিদ্ধ বস্তু বলিয়াই বিবেচনা করি। কিন্তু এই জগৎ যখন দেশে ও কালে অভিব্যক্ত, তখন ইহা অবশ্যই এমন একটা বস্তুর বিকাশ, যে বস্তুটী দেশ ও কালের অতীত। জগৎটা যখন আমাদের সম্মুখে অভিব্যক্ত দেখিতেছি, তখন ইহা অবশ্যই কোন বস্তু হইতেই অভিব্যক্ত হইয়াছে। ইহা 'শূন্য' হইতে আইসে নাই।—এই প্রকাণ্ড কথাটা আমরা একেবারে ভুলিয়া যাই। এই কথাটা ভুলিয়া গিয়া আমরা জগৎটাকে একটা স্বতন্ত্র বস্তু, স্বাধীন বস্তু, স্বতঃসিদ্ধ বস্তু বলিয়াই গ্রহণ করি। আমরা মনে

---

* ব্রহ্মসূত্রভাষ্য, দ্বিতীয় অধ্যায়ের-প্রথম পাদ।

† "সতো হি সম্বন্ধঃ সম্ভবতি। ন সদসতোঃ, অসতোর্বা"—ব্রহ্মসূত্র. ২।১।১৮। "দ্বয়ায়ত্তত্বাৎ সম্বন্ধস্য"।

করিয়া থাকি যে, জগতের বিকার-গুলি **অনন্তদেশে ও অনন্তকালে বিস্তৃত** রহিয়াছে এবং এই প্রকারেই পরস্পর **কার্য্য-কারণ-শৃঙ্খলে বদ্ধ হইয়া ক্রিয়া** করিয়া চলিয়াছে। শঙ্করাচার্য্য আমাদিগকে **বলিয়া গিয়াছেন যে জগৎকে** যদি এইরূপ স্বাধীন, স্বতন্ত্র, স্বয়ংসিদ্ধ বস্তু **বলিয়া গ্রহণ কর, তাহা হইলে তুমি** প্রকাণ্ড ভুল করিলে। এ প্রকার স্বাধীন জগৎ **'অসত্য', 'মিথ্যা'। এ জগৎ** ব্রহ্মবস্তু হইতে অভিব্যক্ত। ব্রহ্মই, এই জগতের **কারণ। যিনি দেশ-**কালাতীত, এই জগৎ তাঁহারই দেশ-কালে বিকাশ। এই **জগৎ তাঁহারই** স্বরূপের অভিব্যক্তি ; সুতরাং এই জগৎ, তাঁহা হইতে **স্বতন্ত্র হইয়া, তাঁহাকে** ছাড়িয়া স্বাধীন-ভাবে থাকিতে পারে না।

এই কথাগুলি শঙ্করাচার্য্য কি প্রকারে বলিয়া **দিয়াছেন, নিম্নে আমরা** তাহা প্রদর্শন করিতেছি। ইহা হইতে পাঠক দেখিতে পাইবেন যে ভাষ্যকার এই জগৎকে, নামরূপাত্মক বিকারগুলিকে, কি ভাবে 'অসত্য' 'মিথ্যা' বলিয়া নির্দ্দেশ করিয়াছেন।

(i) জগতের নাম-রূপাত্মক বিকার-গুলি আপনা আপনি আইসে নাই। সুতরাং এই বিকার-গুলিই যে স্বয়ংসিদ্ধ, স্বাধীন 'বস্তু', তাহা হইতে পারে না। যেখানেই কোন বিকার দেখিবে, সেইখানেই দেখিবে, ঐ বিকার কোন বস্তু বা জীবেরই বিকার।—কোন বস্তু বা জীবের স্বরূপ হইতেই উহা অভিব্যক্ত। সুতরাং উহা কোন বস্তুবিশেষ হইতে বা কোন জীব-বিশেষ হইতে অভিব্যক্ত গুণ বা ধর্ম্ম। তাহা হইলেই, তুমি ঐ বিকার-গুলিই যে স্বতঃসিদ্ধ, স্বাধীন, বস্তু, তাহা বলিবে কিরূপে? যেটী প্রকৃত বস্তু, উহারা তাহা হইতেই অভিব্যক্ত হইয়াছে এবং তাহাকেই আশ্রয় করিয়া রহিয়াছে*।

(ii) যে বস্তু বা জীবের স্বরূপ হইতে ঐ গুণ বা বিকার-গুলি অভিব্যক্ত হইয়াছে, তাহাকে ছাড়িয়া, তাহা হইতে 'বিভক্ত' হইয়া, তাহা হইতে 'স্বতন্ত্র' হইয়া উহারা থাকিতে পারে না†।

---

* "নতু 'বস্তু'-বৃত্তেন বিকারো নাম কশ্চিদস্তি ; নামধেয়মাত্রং হ্যেতৎঅনৃতং ; মৃত্তিকেত্যেব সত্যং" —ব্রহ্মসূত্র, ২।১।১৪

† "যস্ত চ যস্মাদাত্মলাভঃ, স তেন 'অপ্রবিভক্তো' দৃষ্টঃ যথা ঘটাদীনাং মৃদঃ." সামান্তস্ত (কারণস্ত) গ্রহণেন, তদ্গতাঃ বিশেষাঃ (বিকারাঃ) গৃহীতা ভবন্তি। ন ত এব নির্ভিদ্য গ্রহীতুং শক্যন্তে"— বৃহ° ভা°, ২।৪।৭।

(iii) বিকার-গুলি যখন কোন বস্তু বা জীবের 'স্বরূপ' হইতে অভিব্যক্ত, তখন উহাদের নিজের কোন স্বতন্ত্র স্বরূপ থাকিতে পারে না। এই জন্যই বিকারগুলি নিয়ত চঞ্চল, অস্থির, পুনঃ পুনঃ রূপান্তর প্রাপ্ত হয়[*]। ইহারা যে বস্তু বা জীবের ধর্ম্ম বা গুণ, তাহারই স্বরূপের পরিচয় প্রদান করিয়া থাকে। কাজেই, সেই স্বরূপটাকে বাদ্ দিয়া ইহাদিগকে বুঝা যায় না। সুতরাং ইহাদিগকে সেই স্বরূপ হইতে 'স্বতন্ত্র' বস্তু বলিবে কি প্রকারে[†] ?

এই প্রকারে শঙ্করাচার্য্য, এই জগৎকে বা এই জগতে অভিব্যক্ত বিকার-গুলিকে, স্বতন্ত্র, স্বাধীন, স্বয়ংসিদ্ধ বস্তু বলিয়া গ্রহণ করিতে পারেন নাই। এই জগৎ যাঁহার অভিব্যক্তি, তাঁহা হইতে এই জগৎকে 'স্বতন্ত্র' করিয়া লওয়া যায় না। "মরুভূমি হইতে স্বতন্ত্র করিয়া লইয়া কি মরীচিকাকে ভাবিতে পারা যায়"?[‡]। তাই, এ জগৎ ব্রহ্ম হইতে স্বতন্ত্র বস্তু নহে; বিকার-গুলিও—যে বস্তু বা জীবের বিকার, তাহা হইতে স্বতন্ত্র বস্তু নহে।

(৩) এই সকল আলোচনা হইতে বুঝিতে পারা যাইতেছে যে, যিনি দেশ কালাতীত ব্রহ্ম,—এ জগৎ তাঁহার 'কার্য্য'। শঙ্কর এই কারণ ও কার্য্যের সম্বন্ধকে "অনন্য" শব্দে নির্দ্দেশ করিয়াছেন[§]। জগৎ যখন ব্রহ্ম হইতে 'স্বতন্ত্র' হইয়া থাকিতে পারে না, তখন জগৎ নিশ্চয়ই ব্রহ্ম হইতে 'স্বতন্ত্র' বা 'অন্য' কোন স্বাধীন স্বয়ংসিদ্ধ বস্তু হইতে পারিতেছে না। এই জন্যই এই

---

[*] "দৃষ্ট-নষ্ট স্বরূপত্বাৎ, স্বরূপেণ অনুপাখ্যত্বাৎ (বিকারাণাং)"—ব্রহ্মসূত্র, ২।১।১৪। কিন্তু "কারণস্য ত্রিষপি কালেষু স্বরূপাব্যভিচারাৎ" (বৃ, ভা, ২।৪।১২)। সর্ব্বকার্য্যানাং স্বরূপতো নিত্যত্বং, অবস্থাভিবিনাশিত্বং। (ব্যাস-ভাষ্য)।

[†] "যৎস্বরূপ-ব্যতিরেকেণ চ গ্রহণং যস্য, তস্য তদাত্মত্বমেব দৃষ্টং লোকে…শব্দ সামান্যব্যতিরেকেণ অভাবাৎ শব্দবিশেষাণাং-- বৃহ° ভা°, ২।৪।৭ "কারণাৎ ব্যতিরেকেণ অভাবঃ কার্য্যস্য "(ব্রহ্মসূত্র. ২।১।১৪।) "নহি ইদানীমপি কার্য্যং, কারণাত্মত্বমন্তরেণ. "স্বতন্ত্রমেব" অস্তি (২।১।৭)।

[‡] "নহি মৃন্ময়াশ্রিত্য ঘটাদেঃ সত্বং স্থিতি র্বা অস্তি" (ছান্দো°,)। "সদাত্মনৈব সত্যং বিকারজাতং. স্বতস্তু অনৃতমেব…সতোঽন্যত্বে অনৃতত্বং" (ছা°)।

[§] "তদনন্যত্বং আরম্ভনশব্দাদিভ্যঃ" (ব্রহ্মসূত্র, ২।১।১৪)

জগৎ—ব্রহ্ম হইতে 'অনন্য'। শঙ্করের সিদ্ধান্ত এই যে, এই জগৎটা—ব্রহ্ম হইতে অভিব্যক্ত। জগৎ—ব্রহ্মেরই অবস্থাবিশেষ, রূপান্তর। এজগৎ—তাঁহারই স্বরূপের পরিচয় দিবে বলিয়া অভিব্যক্ত হইয়াছে*। সুতরাং জগৎ ব্রহ্ম অপেক্ষা একটা একান্ত স্বতন্ত্র বস্তু, ভিন্ন বস্তু হইবে কি প্রকারে? সুতরাং, জগৎকে স্বতন্ত্র, স্বাধীন, স্বয়ংসিদ্ধ বস্তু বলিয়া মনে করিলে ভুল হইল। তাঁহা হইতে স্বতন্ত্র করিয়া লইলে, এই জগৎ মিথ্যা হইল, অসত্য হইল। এই রূপেই ভাষ্যকার সর্ব্বত্র জগৎকে 'মিথ্যা' বলিয়াছেন। এইজন্যই শঙ্কর বলিয়াছিলেন—

"কার্য্যস্য কারণাত্মত্বং, নতু কারণস্য কার্য্যাত্মত্বং"—কার্য্য, উহার কারণের স্বরূপেরই অভিব্যক্তিমাত্র এবং সেই কারণটী—কার্য্যের মধ্যে আপন স্বরূপের স্বাতন্ত্র্য ঠিক্ রাখে।

(৪) শঙ্করাচার্য্য এইভাবে, কারণ ও কার্য্যের সম্বন্ধ নির্ণয় করিয়াছেন। পাশ্চাত্ত্য পণ্ডিতগণ এই "অনন্য" শব্দটীকে, "Identical" শব্দ দ্বারা অনুবাদ করিয়াছেন। আমরা বলিতে বাধ্য হইতেছি যে, এই অনুবাদ অত্যন্ত অসঙ্গত ও ভ্রমপূর্ণ অনুবাদ। এই অনুবাদ গ্রহণ করিলে, কার্য্য ও কারণ—এক হইয়া উঠে। ব্রহ্ম ও জগৎ—এক হইয়া উঠে না। মূলে এই ভ্রম করাতেই পাশ্চাত্য পণ্ডিতগণ, শঙ্করের অদ্বৈতবাদকে Pantheism বলিয়াই বুঝিয়াছেন!! শঙ্করাচার্য্য বারংবার বলিয়া দিয়াছেন যে, 'কারণ ও কার্য্য' ইহার সম্বন্ধ বুঝিতে

---

* এইজন্য বেদান্তদর্শনে প্রথম অধ্যায়ের সর্ব্বত্র বিকারগুলিকে "ব্রহ্ম-লিঙ্গ" শব্দে ব্যাখ্যা করা হইয়াছে।

যৎ তত্র অফলং শ্রূয়তে জগদুৎপত্ত্যাদি…তৎ ব্রহ্মদর্শনোপায়ত্বেনৈব বিনিযুজ্যতে, ন স্বতন্ত্রং ফলায় অবকল্পতে" ইত্যাদি, ব্রহ্মসূত্র. ২।১।১৪। "একরূপৈকত্ব-প্রত্যয়দার্ঢ্যায়ৈব সর্ব্ববেদান্তেষু—উৎপত্তিস্থিতি লয়াদিকল্পনা…ন ব্রহ্মণঃ উৎপত্ত্যাদ্যনেক ধর্ম্মবিচিত্রতা-প্রদর্শনায় ইত্যাদি।"—বৃহ° ভা°. ২।১।২০। সকল অবস্থান্তরের মধ্যেই তাঁহার একত্ব (Identity) স্থির থাকিয়া যাইতেছে; তিনি নানা অবস্থাবিশিষ্ট হইয়া উঠিতেছেন না। পাঠক এই কথাটি মনে রাখিবেন।

† "অত্যন্ত সারূপ্যেচ প্রকৃতি-বিকারভাব এব প্রলীয়েত" (ব্র° সূ, ২।১।৬) "বিকারব্যতিরেকেনাপি ব্রহ্মণোঽবস্থানং শ্রূয়তে; প্রকৃতি-বিকারয়ো র্ভেদেন ব্যপদেশাৎ"। (২।১।২৭)। "ঈক্ষণীয়-ব্যাকর্ত্তব্যপ্রপঞ্চাৎ পৃথক্ ঈশ্বরসত্ত্বশ্রুতেঃ ন কৃৎস্নপ্রসক্তিঃ" (রত্নপ্রভাটীকা)।

দুইটা কথা মনে করিয়া রাখিতে হইবে। যদি 'কারণ' ও উহার কার্য্যকে—"এক"ই বস্তু বল,—উভয়কে "Identical" বল,—তাহা হইলে, কারণ ও কার্য্য—এই শব্দ দুইটীর ভেদ উঠিয়া যায়। পাশ্চাত্য পণ্ডিতেরা আজ যে **ভুল** করিতেছেন, শঙ্করের টীকাকারগণও বহুশতাব্দী পূর্ব্বে এই আশঙ্কা করিয়াছিলেন। কি জানি যদি লোকে, কার্য্য ও কারণকে Identical বা এক বলিয়াই মনে করে, এই আশঙ্কায় টীকাকারও বলিয়া দিয়াছিলেন যে,—

"কারণাৎ পৃথক্-সত্তা-শূন্যত্বং সাধ্যতে,
ন ঐক্যাভিপ্রায়েণ"*।

"কার্য্য বা বিকার-গুলি উহাদের 'কারণ' হইতে স্বতন্ত্র নহে,"—শঙ্কর বলিয়া দিয়াছেন যে কার্য্য ও কারণের সম্বন্ধ বুঝিতে হইলে,—এই একটা অংশ মনে রাখিতে হইবে। আবার, আর একটা অংশও মনে রাখিতে হইবে; সে অংশটা এই যে—"কারণ, উহার কার্য্যগুলি হইতে স্বতন্ত্র"†। এই দুইটী কথা একত্র মনে রাখিতে হইবে। এমন স্পষ্ট কথা বলাতেও, কেমন করিয়া পাশ্চাত্য পণ্ডিতেরা—কারণ ও কার্য্যের সম্বন্ধকে "Identical" বলিয়া ব্যাখা করিলেন, ইহা আমরা বুঝিতে নিতান্তই অসমর্থ !! শঙ্করের এই সিদ্ধান্তটা মনে রাখিলে, বেদান্তের সর্ব্বত্র ব্যবহৃত "সর্ব্বং খল্বিদং ব্রহ্ম," "ব্রহ্মৈবেদং সর্ব্বং," "ইদং সর্ব্বং যদয়মাত্মা," "আত্মৈব ইদং সর্ব্বং"‡—এই সকল বাক্যের অর্থ, এই এই সকল কথার প্রকৃত অভিপ্রায়,—অনায়াসে বুঝিতে পারিব।

যেখানেই বেদান্তে—"সর্ব্বং খল্বিদং ব্রহ্ম"—এই প্রকারের উক্তি আছে, ভাষ্যকার সেইখানেই বলিয়া দিয়াছেন যে, এই প্রকার উক্তির ইহা অর্থ নহে যে,—ব্রহ্মই—এই বিশ্ব বা জগৎ; ব্রহ্মে ও জগতে কোন ভেদ নাই। এ সকল উক্তির অর্থ এই যে,—

---

* অর্থাৎ, কার্য্য বা বিকারবর্গের নিজের কোন স্বতন্ত্র সত্তা থাকিতে পারে না। কারণের সত্তাতেই উহার সত্তা। কারণ ও বিকার—উভয়ে একই বস্তু নহে।

† "কার্য্যস্য কারণাত্মত্বং, ন তু কারণস্য কার্য্যাত্মত্বং"।

‡ শঙ্কর বলিতেছেন—"তস্মাৎ বিকারেঽন্বগতং জগৎকারণং ব্রহ্ম—'তদিদং সর্ব্ব'মিত্যুচ্যতে; যথা 'সর্ব্বং খল্বিদং ব্রহ্মেতি'। কার্য্যঞ্চ কারণাৎ অব্যতিরিক্তমিতি বক্ষ্যামঃ" (ব্রহ্মসূত্র, ১।১।২৫)। আবার,—

(*i*) কার্য্য বা বিকার-গুলি উহাদের কারণ হইতে **স্বতন্ত্র কোন বস্তু নহে।** কার্য্য বা বিকার-গুলি উহাদের কারণ **হইতে স্বতন্ত্র হইয়া থাকিতে পারে না।** আর,—

(*ii*) কারণটী কিন্তু, উহার কার্য্য হইতে **স্বতন্ত্র, ভিন্ন। কার্য্যাকার** ধারণ করিলেও, কারণটী আপন স্বাতন্ত্র্য হারায় না ;—কোন **স্বতন্ত্র বস্তু হইয়া** উঠে না। সকল বিকারের মধ্যে, সকল অবস্থান্তরের মধ্যে, **কারণের একত্ব** ঠিক থাকে।—তবেই পাঠক দেখুন—**শঙ্করের** মতে ঐ **সকল উক্তির ইহাই** অর্থ পাওয়া যাইতেছে যে, এই জগৎ,—**ব্রহ্মেরই অবস্থান্তর, আকার-বিশেষ,** রূপান্তর মাত্র ; ইহা ব্রহ্ম হইতে কোন স্বতন্ত্র স্বাধীন বস্তু নহে। **কিন্তু এই** জগদাকার ধারণ করাতেও, এই জগতের মধ্যে ব্রহ্ম, **আপন স্বাতন্ত্র্য ও একত্ব** হারাণ নাই ; কেননা, তিনি জগৎ হইতে স্বতন্ত্র। ভাষ্যকার **বলিয়াছেন যে,** যাহারা ব্রহ্মও জগৎকে 'এক' মনে করে, তাহারা **"অবিদ্যাচ্ছন্ন"। অবিদ্যাচ্ছন্ন** লোকেরাই, পরমাত্মার স্বাতন্ত্র্য ভুলিয়া গিয়া, পরমাত্মা ও জগৎকে—"এক" বা Identical বস্তু বলিয়া মনে করে। ভাষ্যকার কেন এ সকল লোককে "অবিদ্যাচ্ছন্ন" বলিলেন, এখন আমরা, তাহাই দেখিব।

(৫) অনেকের মুখে এরূপ একটা কথা সর্ব্বদাই শুনিতে পাওয়া যায় যে, শঙ্করাচার্য্য তাঁহার ভাষ্যে, আমাদের জাগরিতাবস্থাকে **'স্বপ্নাবস্থার' সঙ্গে** তুলনা করিয়া, উভয় অবস্থা তুল্য বলিয়া নির্দ্দেশ করিয়াছেন ; সুতরাং বুঝা যাইতেছে যে, তাঁহার মতে, এ জগৎটা অসত্য, মিথ্যা, অলীক। তাঁহারা বলেন এই যে, জাগরিতকালে বৃক্ষ, লতা, মনুষ্য, পশু প্রভৃতি বস্তুর আমরা প্রত্যক্ষ করিয়া থাকি, এবং শব্দ-স্পর্শ, সুখ-দুঃখাদির জ্ঞান লাভ করিয়া থাকি। স্বপ্ন-দর্শনকালে আমরা, এই জাগরিত-কালের মত কত বস্তু প্রত্যক্ষ করি

"সর্ব্বং খল্বিদং ব্রহ্মেতি'—ইত্যেবমাদ্যাভিঃ শ্রুতিভিঃ ত্রিষ্বপি কালেষু কার্য্যস্য কারণানন্যত্বং…শ্রাব্যতে…তত্র …ন কার্য্যধর্ম্মৈঃ কারণং সংস্পৃশ্যতে ইতি"। "কার্য্যাৎকারণং ভিন্নসত্তাকং"। "কল্পিতস্য অধিষ্ঠানাভেদেপি অধিষ্ঠানস্য ততো ভেদঃ"। "অধিষ্ঠানস্য…কার্য্যাৎ পৃথক্-সত্ত্বাৎ, ন অধিষ্ঠানস্য কার্য্য-ধর্ম্মবত্ত্বং"। "যৎ যস্মিন্ অনুগতস্বভাবে (continued identity and unity) সত্যেব, উৎপত্তি-স্থিতিমত্ত্বং ভজতে, তৎ তস্মিন্ 'কল্পিতং'। ('কল্পিত' শব্দের প্রাচীন অর্থ এই। আর এক অর্থ—'যৎ ন স্বতঃসিদ্ধং, তৎ 'কল্পিতং')॥

এবং কত বিষয়ের জ্ঞান আমাদের হইয়া থাকে। তাঁহারা বলেন যে, শঙ্করাচার্য্য এই দুই কালের অনুভূত বস্তুগুলি ও তদ্বিষয়ক জ্ঞানকে তুল্য বলিয়া মীমাংসা করিয়াছেন। কিন্তু ইহা কাহারই অবিদিত নাই যে, স্বপ্ন-দৃষ্ট বস্তুগুলি অসত্য-মিথ্যা। তাহা হইলেই দাঁড়াইতেছে যে, শঙ্কর-মতে জাগরিতকালের বস্তুগুলিও তবে অসত্য, মিথ্যা হইতেছে। অনেকের নিকট এই কথাটা শুনিতে পাওয়া যায়*।

আমরা পাঠকবর্গের সম্মুখে, এ বিষয়ে শঙ্করাচার্য্য কি মীমাংসা করিয়াছেন তাহা উপস্থিত করিতেছি। পাঠক দেখিতে পাইবেন যে, এই তুলনায়, বৃক্ষ, লতাদি বস্তুকে অলীক বলিয়া উড়াইয়া দিবার কোন কথা বলা হয় নাই। লোকে, ভাল করিয়া শঙ্করের মন্তব্যগুলি তলাইয়া দেখে না। উপর উপর দেখিয়াই একটা সিদ্ধান্তে উপনীত হয়; তাই এই প্রকার ধারণা প্রচলিত হইয়া পড়িয়াছে।

বৃহদারণ্যকে "অজাতশত্রু ও বালাকির" উপাখ্যানে, জাগরিতাবস্থা ও স্বপ্নাবস্থার বিস্তৃত বিবরণ আছে। শঙ্করাচার্য্য এই উভয় অবস্থার তুলনা করিয়া যাহা মীমাংসা করিয়াছেন, তাহাতে তিনি এই জগৎকে যে অর্থে অসত্য, মিথ্যা বলিয়াছেন, পাঠক তাহা সুস্পষ্ট বুঝিতে পারিবেন। তিনি বলিতেছেন—

স্বপ্নে, আমি রাজা হইয়া সিংহাসনে উপবিষ্ট রহিয়াছি; সম্মুখে দাস দাসী প্রভৃতি পরিজনবর্গ আমার সেবা করিতেছে; আমি নানারূপ সুখদুঃখাদি অনুভব করিতেছি;—এই প্রকার বোধ করিয়া থাকি। এ স্থলে প্রশ্ন এই যে, স্বপ্নদর্শনকালে এই যে আত্মা, আপনাকে রাজা বলিয়া বোধ করে, পরিজনাদি দ্বারা পরিবৃত দেখিতে পায়; সুখদুঃখাদি অনুভব করিতে থাকে;—এই সকল সুখ-দুঃখাদি নানা ধর্ম্মবিশিষ্ট বলিয়াই ত তখন আত্মাকে বুঝা যায়। তবে কি আত্মার ইহাই 'স্বরূপ'? অথবা, এই সকল সুখদুঃখাদি ধর্ম্ম

---

* ব্রহ্মসূত্রে, স্বপ্নদৃষ্টবস্তুগুলিকে লক্ষ্য করিয়া "মায়া" শব্দ প্রযুক্ত হইয়াছে। কিন্তু তাহাতে উহাদিগকে মিথ্যা বলিয়া উড়াইয়া দেওয়া হয় নাই।

বা অবস্থা হইতে আত্মার একটা 'স্বতন্ত্র' স্বরূপ আছে ? শঙ্কর বলিয়াছেন যে কেহ কেহ মনে করেন যে, এই সকল অবস্থা-বিশিষ্ট যে, সেইত আত্মা। রাজা বলিয়া বোধ, দাস দাসী প্রভৃতির দর্শন, সুখ-দুঃখাদির অনুভব—এই সকল ধর্ম্ম বিশিষ্ট যে, সেইত আত্মা। এ সকল ছাড়া আবার, আত্মার একটা স্বতন্ত্র 'স্বরূপ' কোথায় ? এই গুলি লইয়াই ত আত্মা। শঙ্কর এই কথার উত্তরে সিদ্ধান্ত করিয়াছেন যে,—'না ; এই সকল সুখ-দুঃখাদি বিবিধ ধর্ম্ম, কখনই আত্মার স্বরূপ হইতে পারে না। এই সকল দাস-দাসী প্রভৃতি পরিজন, রাজ্য-ধনাদি বস্তু, সুখ-দুঃখাদি,—কখনই আত্মার 'স্বরূপ' হইতে পারে না। স্বপ্নে, এই সকল বস্তুর যে জ্ঞান হয়, এই সকল বস্তু ও বস্তুর বোধকে যদি আত্মার 'স্বরূপ' বলিয়া মনে কর ; তাহা হইলে আমরা বলিব যে, আত্মার স্বরূপ-ভাবে এ সকল বস্তুর 'সত্তা' নাই ; ইহারা আত্মার উপরে 'মিথ্যা' 'আরোপিত' হইয়া থাকে মাত্র*। আত্মার যেটী প্রকৃত স্বরূপ, উহা এই সকল বস্তু ও বস্তুর বোধ হইতে 'স্বতন্ত্র'। জাগরিত-কালের বস্তু ও বস্তুর বোধ সম্বন্ধেও ইহাই বুঝিতে হইবে। উহারাও আত্মার স্বরূপ নহে ; আত্মার স্বরূপ যেটী, তাহা ঐ সকল ধর্ম্ম বা অবস্থান্তরের মধ্যেও আপন 'স্বাতন্ত্র্য' ঠিক্ রাখে।

পাঠক, শঙ্করের এই সকল কথা হইতে দেখিতেছেন যে, শঙ্কর জাগরিতাবস্থায় দৃষ্ট বা অনুভূত বস্তু বা বস্তুর জ্ঞানকেই 'মিথ্যা' বা অবিদ্যমান বলিতেছেন না। স্বপ্ন-দৃষ্ট বস্তু বা বস্তুর বোধকেও তিনি অসত্য, মিথ্যা বলিতেছেন না।

---

* এই স্থলের এই 'মিথ্যা' শব্দটী এবং 'অবিদ্যমান' শব্দটী দেখিয়াই অনেকে ঠিক করিয়া লইয়াছেন যে তবে ত শঙ্কর জগতের বস্তুগুলিকেই মিথ্যা ও অবিদ্যমান বলিলেন !!! স্থলটী এই—

"তস্মাৎ স্বপ্নে, মৃষাধ্যারোপিতা এব, আত্মভূতত্বেন লোকা অবিদ্যমানা এব সন্তঃ। তথা জাগরিতেঽপি —ইতি প্রত্যেতব্যং"।

তিনি বলিতেছেন এই যে. এই সকল সুখদুঃখাদি ধর্ম্মগুলিকে যদি 'আত্মভূত' মনে কর, তাহা হইলে ইহারা আত্মার 'স্বরূপভাবে' বিদ্যমান নাই। লোকে মিথ্যা করিয়া ইহাদিগকে আত্মার স্বরূপ বলিয়া মনে করে। 'আত্মভূতত্বেন অবিদ্যমানাঃ'—বলিয়াছেন।

এস্থলে আর একটা বিষয় লক্ষ্য করা কর্ত্তব্য। আত্মার 'স্বরূপটী' যে ঐ সকল সুখ-দুঃখাদি বিবিধ ধর্ম্ম বা অবস্থা হইতে স্বতন্ত্র; ইহারাই যে আত্মার স্বরূপ নহে, তাহা বলিতে গিয়া শঙ্কর তিনটী সুন্দর যুক্তি দিয়াছেন। যুক্তি কয়েকটী এই—

(ক) "ব্যভিচারদর্শনাৎ"।—স্বপ্নে আত্মায় যে সকল ধর্ম্ম উদ্বুদ্ধ হইয়া উঠিয়াছে; উহাদিগকে আত্মার স্বরূপ বলা যায় না। কেননা, ইহারা পরিবর্ত্তিত হয়, রূপান্তরিত হয়। স্বপ্নে উহাদের যে আকার, যে রূপ দেখিতেছ, জাগিয়া উঠিলে আর সে রূপ, সে আকার থাকিবে না। কিন্তু যেটী যাহার 'স্বভাব,' বা 'স্বরূপ', তাহার পরিবর্ত্তন করা যায় না। সুতরাং উহাদিগকেই আত্মার স্বরূপ বলিতে পার না।

(খ) "দৃশ্যত্বাৎ"।—ঐ সকল সুখ-দুঃখাদি ধর্ম্মকে আত্মা স্বপ্নে নিজের 'বিষয়' রূপে—object—দৃশ্যরূপে, অনুভব করিয়া থাকে। দৃশ্য বস্তু হইতে উহার 'দ্রষ্টা' অবশ্যই স্বতন্ত্র। সুতরাং উহাদিগকে আত্মার স্বরূপ বলিতে পার না।

(গ) "বস্ত্বন্তর-সম্বন্ধ-জনিতত্বাচ্চ"।—ঐ সকল ধর্ম্ম বা বিকার যে আত্মাতে উদ্রিক্ত হইয়াছে, তাহা অন্য বস্তুর সহিত সংসর্গের ফলে বা কারণান্তর-যোগে। যাহা অন্য কোন কারণের সম্পর্কে আসায় উৎপন্ন হয়, তাহাত অনিত্য; সেই কারণটী চলিয়া গেলে আর উহা থাকিবে না। সুতরাং ঐ ধর্ম্ম-গুলিকে আত্মার স্বরূপ বলিতে পারা যায় না। আমাদের জাগরিত-কালেও, বিষয়েন্দ্রিয়যোগে যে সকল ধর্ম্ম বা ক্রিয়া উদ্রিক্ত হয়, সেগুলিও, এই সকল হেতুতে আত্মার "স্বরূপ" হইতে পারে না।

পাঠক তাহা হইলেই দেখিতে পাইতেছেন যে, শঙ্কর স্বপ্ন-দৃষ্ট বস্তুগুলিকে বা জাগ্রৎ-দৃষ্ট বস্তুগুলিকে 'মিথ্যা' বলিয়া উড়াইয়া দেন নাই। আত্মার যেটী প্রকৃত স্বরূপ সেটী ঐ সকল ধর্ম্ম বা গুণ হইতে স্বতন্ত্র। যাহারা অবিদ্যাচ্ছন্ন তাহারাই ঐ ধর্ম্ম বা গুণ গুলিকে আত্মার উপরে "আরোপিত" করিয়া লয় এবং উহাদিগকেই আত্মার স্বরূপ বলিয়া মনে করে। কারণান্তর-যোগে আত্মায় যে সকল ধর্ম্ম বা ক্রিয়া বা গুণ উদ্বুদ্ধ হইয়া উঠে, সে সকলের মধ্যে আত্মার একত্ব ও স্বাতন্ত্র্য পরিস্ফুট থাকে। ইহা ভুলিয়া, অবিদ্যাচ্ছন্ন লোকেরা,

উহাদিগকেই আত্মার স্বরূপ বলিয়া বোধ করে। ইহাকেই বেদান্তে "অধ্যারোপ" বলে। ইহা মিথ্যা, অসত্য। সর্ব্বত্র ভাষ্যকার এই ভাবেই ধর্ম্মগুলিকে মিথ্যা, অসত্য বলিয়াছেন *।

(৬) কার্য্য ও কারণের সম্বন্ধ নির্ণয় করিতে গিয়া শঙ্করাচার্য্য বলিয়া দিয়াছেন যে, প্রত্যেক বস্তু বা জীবের একটা স্বতঃসিদ্ধ 'স্বরূপ'; এবং উহার একটী 'সম্বন্ধি রূপ' আছে†। যখন একটা বস্তুর বা জীবের, অপর একটা বস্তুর সহিত বা অবস্থার সহিত বা কোন ব্যক্তির সহিত সম্বন্ধ হয়,—সেইটাই উহার 'সম্বন্ধি রূপ'। অপর কাহারও সহিত সম্পর্ক হইলেই যে, তদ্‌যোগে বস্তুর বা ব্যক্তির 'স্বরূপ'টা একটা স্বতন্ত্র বস্তু হইয়া উঠে তাহা নহে। ঐ স্বরূপটীর কোন হানি হয় না। সুতরাং প্রত্যেক বস্তু বা জীব, অপর কাহারও সহিত সম্পর্কে আসিলেও, উহার আপন স্বরূপটী ঠিক্‌ই থাকিয়া যায়। বস্তু বা জীবের, নিজের একটা স্বরূপ না থাকিলে উহা অপর বস্তুর সহিত সম্পর্কে আসিবে কি প্রকারে? স্বরূপ না থাকিলে, অপরের সহিত সম্পর্ক হইবে কাহার?

শঙ্কর বলিয়াছেন যে, অপর কোন বস্তুর সহিত সম্পর্ক হইলে, একটা বস্তুর অবস্থান্তর উপস্থিত হয়। এই অবস্থান্তর উপস্থিত হওয়াতে, বস্তুর যেটী প্রকৃত 'স্বরূপ', সেটী আপনাকে হারায় না। উহা আপনাকে হারাইয়া অবস্থান্তরিত হইয়া উঠে না। অন্য কাহারও সহিত সম্পর্কে আসিয়া, উহার যত প্রকার অবস্থান্তর উপস্থিত হউক্ না কেন; ঐ

---

* বেদান্তদর্শনের ৩।২।২১। সূত্রের ভাষ্যে, শঙ্করের মন্তব্য বড় মূল্যবান্। তিনি তথায় বলিয়াছেন যে, বাহ্য বস্তুই বল, আর আধ্যাত্মিক বস্তুই বল, ইহাদিগকে মিথ্যা বলিয়া উড়াইয়া দেওয়া একেবারেই অসম্ভব। কিন্তু এই বস্তুগুলিকে ব্রহ্মের উপরে 'আরোপ' করা হইয়া থাকে। ব্রহ্মের স্বাতন্ত্র্যও একত্ব ভুলিয়া, জগৎটাকেই ব্রহ্মের স্বরূপ বলিয়া মনে করা হয়। এইভাবে আরোপিত জগৎ মিথ্যা, অসত্য॥ তৈত্তিরীয়-ভাষ্যে শঙ্কর বলিয়াছেন যে, "নাম রূপ—আত্মার ধর্ম্ম বা স্বরূপ হইতে পারে না; লোকে কিন্তু নাম—রূপকে আত্মার ধর্ম্মরূপে 'কল্পনা' করে। "নাম-রূপে চ ন আত্মধর্ম্মৌ……তে চ পুনঃ কল্পিতে" (২।৮)।

† বস্তুর স্বরূপ ও সম্বন্ধি-রূপ—Each object is for itself, as well as for others, স্বরূপ—Substantival existence, সম্বন্ধি-রূপ—Adjectival existence,

সকল অবস্থান্তরের মধ্যে উহা আপনার একত্ব ও স্বাতন্ত্র্য বজায় রাখে *। উহা আপন স্বরূপকে হারাইয়া, স্বতন্ত্র একটা বস্তু হইয়া উঠে না। আপন স্বরূপকে ত্যাগ করিয়া, উহা, অপর কাহারও সম্পর্কে আসিয়া একটা নূতন বস্তু হইয়া উঠিল, ইহা যদি মনে কর, তাহা হইলেই, ভুল করিলে। শঙ্কর ইহাকে 'মিথ্যা জ্ঞান' বলিয়াছেন।

অবিদ্যাচ্ছন্ন লোকেরাই এই প্রকার ভুল করিয়া থাকে। অবিদ্যাগ্রস্ত লোকেরাই মনে করিয়া থাকে যে, বস্তু বা জীবের স্বরূপটা আপনাকে হারাইয়া অবস্থান্তরিত হয়; স্বরূপের আবার স্বাতন্ত্র্য কোথায়? যে নানা অবস্থায় পরিণত হয়, যে নানা অবস্থাবিশিষ্ট, ধর্ম্মবিশিষ্ট হয়, সেই-ই বস্তু বা জীব। আবার বস্তুর বা জীবের স্বতন্ত্র স্বরূপ কোথায়? অবিদ্যাচ্ছন্ন লোকেরা এই ভাবে বস্তু বা জীবকে দেখে। কিন্তু এরূপ বস্তু বা জীব নাই; এরূপ বস্তু বা জীব প্রকৃতই মিথ্যা, প্রকৃতই অসত্য।

শঙ্করাচার্য্য এই মূল্যবান্ তত্ত্বটী এই প্রকারে বলিয়া দিয়াছেন—

(a) স্বরূপ এবং সম্বন্ধি-রূপ বশতঃ, একই বস্তুকে নানাশব্দে ও নানা আকারে ব্যবহার করা হইয়া থাকে। স্বরূপতঃ দেবদত্ত একই লোক। কিন্তু অন্য দশটা অবস্থাযোগে বা বস্তুযোগে, সেই একই দেবদত্তকে, লোকে কখন বালক, কখন যুবা, কখন স্থবির বলিয়া থাকে। আবার কখন বা উহাকেই পিতা, পুত্র, পৌত্র বলিয়া ডাকে। আবার ঐ একই দেবদত্ত কাহারও বা ভ্রাতা, কাহারও বা জামাতা বলিয়া পরিচিত হইয়া থাকে†।

(b) রেখা বা বিন্দু ত একই রকম। কিন্তু স্থানের ভেদে, স্থানের সম্বন্ধে পড়িয়া,—ঐ একই রেখাকে কখন লোকে একশত, কখন এক সহস্র, কখন লক্ষ, কখন পরার্দ্ধ শব্দে নির্দ্দেশ করিয়া থাকে ‡।

---

* "সর্ব্বগতঃ পরমেশ্বরঃ—একঃ স্বতন্ত্রশ্চ"—কঠ-ভাষ্য।

† "একত্বেপি স্বরূপ-বাহ্যরূপাপেক্ষয়া অনেক—শব্দ-প্রত্যযদর্শনাৎ। যথা একোঽপি সন্ দেবদত্তঃ লোকে, স্বরূপং সম্বন্ধি রূপঞ্চ অপেক্ষ্য, অনেক শব্দ-প্রত্যয় ভাক্ ভবতি—মনুষ্যঃ ব্রাহ্মণঃ শ্রোত্রিয়ো, বালো যুবা স্থবিরঃ, পিতা পুত্রঃ পৌত্রো ভ্রাতা জামাতা ইতি" (ব্রহ্মসূত্র, ২।২।১৭)। "যথা দেবদত্ত এক এব সন্ অবস্থান্তর-যোগাৎ অনেক শব্দ প্রত্যয় ভাক্ ভবতি" (২।২।১৭)।

‡ "যথা একাপি সতী রেখা, স্থানান্তরেন নিবিশমানা, এক-দশ-শত-সহস্রাদিশব্দ-প্রত্যয়-ভেদ মনু ভবতি" (২।২।১৭)। শঙ্কর Decimal notation জানিতেন।

(৩) একই উৎপল কখন নীল, কখন লোহিত, কখন শ্বেত বলিয়া কথিত ও ব্যবহৃত হইয়া থাকে। একই দ্রব্য—বিশেষণের ভেদে, কত আকারে প্রতীয়মান হইয়া থাকে *।

(৪) অন্য কোন বস্তুর সহিত সম্পর্কে আসায়, কোন বস্তু বা জীব বিশেষ একটা অবস্থা ধারণ করিল বলিয়াই যে, সে একটা স্বতন্ত্র বস্তু বা জীব হইয়া উঠিল, ইহা মনে করা নিতান্তই ভ্রম। কেন না, স্বরূপতঃ সে পূর্ব্বেও যা' ছিল, এখনও তাহাই আছে। অবস্থাগুলি, সেই স্বরূপকেই ক্রমে ক্রমে বিকাশিত করে। অবস্থার ভেদে, স্বরূপের ভেদ হয় না। দেবদত্ত যখন হস্তপদ সংকুচিত করিয়া বসিয়া থাকে, তখন তাহাকে দেবদত্ত বলিবে; আর যখন সে হস্তপদ প্রসারিত করিয়া আনন্দে নৃত্য-পরায়ণ, তখন তাহাকে যজ্ঞদত্ত বলিবে ইহা কখনই সঙ্গত হইতে পারে না †। এইরূপ, দুধ যখন দধির আকার ধারণ করে, তখনও সেই দুধ স্বরূপতঃ দুধই থাকে ‡। অতি ক্ষুদ্র বটবীজ যখন, বাহির হইতে আপন দেহ-গঠনের উপযোগী উপাদান সংগ্রহ করিয়া তদ্‌যোগে ক্রমে অঙ্কুর-রূপে, পত্রপুষ্পাদিরূপে পরিণত হয়, তখনও স্বরূপতঃ ঐ বীজ, অঙ্কুরাদি অবস্থাভেদের মধ্যে আপনাকে হারাইয়া ফেলে না §। প্রত্যেক অবস্থার সম্পর্কে আসিয়া, উহা, একটা একটা স্বতন্ত্র বস্তু হইয়া উঠে না।

অতএব এই সিদ্ধান্তে উপনীত হইতে পারা যাইতেছে যে, ব্রহ্ম আপন স্বরূপ পরিত্যাগ করিয়া, এই নাম-রূপাদি বিকারের সম্পর্কে, একটা স্বতন্ত্র বস্তু হইয়া উঠেন নাই। নাম রূপাদি বিকারগুলি, ব্রহ্ম হইতেই অভিব্যক্ত

---

* "শুক্লঃ কম্বলঃ, রোহিণী ধেনুঃ, নীলমুৎপলং—ইতি দ্রব্যস্যৈব তেন তেন বিশেষণেন প্রতীয়মানত্বাৎ নৈব দ্রব্য-গুণয়োঃ ভেদ-প্রতীতিরস্তি…তস্মাৎ দ্রব্যাত্মকতা গুণস্য" (২।২।১৭)।

† "ন হি বিশেষদর্শনমাত্রেণ বস্তন্যত্বং ভবতি। নহি দেবদত্তঃ সংকুচিত-হস্তপাদঃ, প্রসারিত হস্তপাদশ্চ বিশেষেণ দৃশ্যমানোপি, বস্তন্যত্বং গচ্ছতি। স এবেতি প্রত্যভিজ্ঞানাৎ।…তথা প্রতিদিন মনেক সংস্থানানাং পিত্রাদীনাং ন বস্তন্যত্বং ভবতি; মম পিতা মম ভ্রাতা…ইতি প্রত্যভিজ্ঞানাৎ"(ব্রহ্মসূত্র, ২।১ ১৮)।

‡ "নান্যত্রেতি চেৎ? ন। ক্ষীরাদীনামপি দধ্যাকার সংস্থানস্য প্রত্যক্ষত্বাৎ" (২।১।১৮)। "ন ক্ষীরস্য সর্ব্বোপমর্দ্দেন দধিভাবাপত্তিঃ" (বৃহ° ভা°, ১।৪।৩)।

§ অদৃশ্যমানানামপি বটধানাদীনাং সমানজাতীয়াবয়বান্তরোপচিতানাং অঙ্কুরাদিভাবেন দর্শনগোচরতাপত্তৌ জন্মসংজ্ঞা"—ইত্যাদি (ব্রহ্মসূত্র, ২।১।১৮)।

হইয়াছে। কিন্তু ইহাদের সম্পর্কে, তাঁহার স্বরূপের কোন হানি হয় নাই। নামরূপাদি বিকারের মধ্যে, সকল পরিবর্ত্তনের মধ্যে,—ব্রহ্মের স্বরূপটী ঠিক্‌ই থাকিতেছে। তাঁহার স্বরূপের একত্ব ও স্বাতন্ত্র্য নষ্ট হইয়া যাইতেছে না *। এই অভিব্যক্ত নাম-রূপাদির সম্পর্কে আসিয়া তাঁহার 'স্বরূপটা'—অন্যরূপ হইয়া উঠিল বলিয়া যদি মনে কর, তবেই ভুল করিলে।

যদি মনে কর যে, এই জগৎটা যখন অভিব্যক্ত হইল তখন, ব্রহ্ম আপন স্বরূপ ত্যাগ করিয়া এই জগৎ নামক একটা 'স্বতন্ত্র বস্তু' হইয়া উঠিলেন, তবেই ভুল করিলে। এ প্রকার জগৎ,অসত্য, মিথ্যা †।

অবিদ্যাচ্ছন্ন লোকেরাই এই জগৎকে ব্রহ্মের উপরে "আরোপিত" করে, এবং তাঁহার 'স্বাতন্ত্র্য' ভুলিয়া গিয়া, এই জগৎটাকে একটা স্বতন্ত্র বস্তু বলিয়া মনে করে। প্রকৃত কথা এই যে, অপর কাহারও সহিত সম্পর্ক হইলেও স্বরূপটী ঠিক্‌ই থাকে। ব্রহ্মের স্বরূপ হইতেই নাম-রূপাদি বিকারগুলি অভিব্যক্ত হইয়াছে। এই সকল নাম-রূপাদি বিকারের সম্পর্কে, ব্রহ্মের স্বরূপটী আপনাকে হারাইয়া, একটা স্বতন্ত্র বস্তু হইয়া উঠিল না ‡। শঙ্কর বলিয়া দিয়াছেন যে, 'সম্বন্ধি-রূপের' মধ্যেও, 'স্বরূপ'টী আপনাকে হারায় না। অবিদ্যাচ্ছন্ন লোকেরা কিন্তু এই জগৎটাকে একটা স্বতন্ত্র বস্তু বলিয়াই ধরিয়া লয়,—মনে করে যে,—ব্রহ্মের 'স্বরূপ'টা মরিয়া গিয়া, একটা সম্পূর্ণ নুতন বস্তু (এই জগৎটা) যেন উপস্থিত হইয়াছে। শঙ্করাচার্য্য, এই প্রকার জগৎকে অসত্য, মিথ্যা বলিয়া নির্দ্দেশ করিয়াছেন। কিন্তু দুঃখের বিষয় এই যে, এত স্পষ্ট নির্দ্দেশ সত্ত্বেও, লোকে তাঁহাকে বুঝিতে পারে নাই !!

পাঠক শঙ্করের এই সিদ্ধান্তটী দেখিলেন। এই জগৎ অভিব্যক্ত হইয়াছে বলিয়াই যে, ব্রহ্ম আপনার স্বরূপকে হারাইয়া একটা স্বতন্ত্র বস্তু হইয়া

---

* সহি পরমেশ্বরঃ সর্ব্বগতঃ—একঃ স্বতন্ত্রঃ (কঠ ভাষ্য, ২।২।১২)। তিনি সর্ব্বগত (Immanent) হইয়াও, স্বতন্ত্র (Transendent).

† "সর্ব্ববিকারাণাং সতোহন্যত্বে চ অনৃতত্বং" ইত্যাদি (ছা ভা, ৬।৩।২)।

‡ "যথা প্রকাশাকাশ-প্রভৃতয়ঃ অঙ্গুলিকরকাপ্রভৃতিষু উপাধিষু সবিশেষা ইব অবভাসন্তে, ন চ স্বাভাবিকীং অবিশেষাত্মতাং জহতি, তদ্বৎ" (ব্রহ্মসূত্র, ৩।২।২৫)।

উঠিয়াছেন, তাহা নহে। এই জগতের মধ্যেও, তাঁহার স্বরূপটা ঠিক্ আছে। তিনি আপন স্বরূপে অবিকৃত থাকিয়াই, এই জগদাকারে অভিব্যক্ত হইয়া রহিয়াছেন এবং জগৎকে পূর্ণতাপ্রাপ্তির উদ্দেশ্যে লইয়া যাইতেছেন। ইহাতে তাঁহার স্বরূপের স্বাতন্ত্র্য বা একত্বের কোনই হানি হয় নাই*। আপন স্বাতন্ত্র্য হারাইলে, তবে ত অন্যবস্তুর যোগে তিনিও, অন্য বস্তু হইয়া উঠিবেন?

(৭) শঙ্কর-ভাষ্যের অনেক স্থলে, কতকগুলি শব্দ ব্যবহৃত হইয়াছে। অনেকে এই শব্দ-গুলি দেখিবামাত্রই মনে করিয়া লইয়াছেন যে, শঙ্কর এই জগৎকে ও জগতের নাম-রূপাদি বিকার-গুলিকে অলীক বলিয়া উড়াইয়া দিয়াছেন! এই শব্দগুলি পরীক্ষা করিয়া দেখা নিতান্ত আবশ্যক। প্রিয় পাঠক, আমরা এই শব্দ কয়েকটার উল্লেখ করিতেছি; এবং শঙ্করাচার্য্য কি অর্থে এই শব্দগুলির ব্যবহার করিয়াছেন, তাহারও উল্লেখ করিয়া দেখাইতেছি। শঙ্কর কি অর্থে এই শব্দগুলির ব্যবহার করিয়াছেন, তাহা তিনি নিজেই, সেই সকল স্থানে, বলিয়া দিয়াছেন। যে ব্যক্তি যে শব্দ বা যে কথাকে নিজে যে অর্থে ব্যবহার করেন, সেই শব্দের ও সেই কথার সেই অর্থটাই গ্রহণ করা কর্ত্তব্য। তাহা না করিয়া, নিজের মনোমত অর্থ করা উচিত নহে। আমরা একে একে শঙ্করের ব্যবহৃত সেই শব্দগুলির উল্লেখ করিতেছি। পাঠক নিজেই বিচার করিয়া দেখিবেন, এই সকল শব্দদ্বারা শঙ্কর এই জগৎটাকে উড়াইয়া দিয়াছেন কিনা!

(a) পাঠক শঙ্কর-ভাষ্যের অনেক স্থলে দেখিতে পাইবেন যে, "এই জগৎ অবিদ্যাকল্পিত"; "নামরূপ গুলি অবিদ্যা-প্রত্যুপস্থাপিত"; "নাম রূপাদির ভেদ অবিদ্যাকল্পিত"; "নাম-রূপাদি উপাধির পরিচ্ছেদ অবিদ্যাত্মক"—এই প্রকার উক্তি আছে। এই 'অবিদ্যাকল্পিত' কথাটার ব্যবহার দেখিয়াই অনেকে এই জগৎকে অলীক বলিয়া উড়াইয়া দিতে চাহিয়াছেন! কিন্তু শঙ্করের অভিপ্রায় তাহা নহে।

---

* "যদ্যপি কার্য্যাত্মনা উদ্রিচ্যতে, তথাপি যৎস্বরূপং পূর্ণত্বং তন্ন জহাতি"—বৃ° ভা°, ৫।১।১ "তথা মূল-কারণমেব আ—অন্ত্যাৎ কার্য্যাৎ তেন তেন কার্য্যাকারেণ নটবৎ সর্ব্ববাবহারাস্পদত্বং প্রতিপদ্যতে"—বেদান্ত-ভাষ্য, ২।১।১৮।

এই "অবিদ্যা" শব্দটী বেদান্তদর্শনে কি অর্থে ব্যবহৃত হইবে, শঙ্করাচার্য্য তাহা অতি স্পষ্ট করিয়া তাঁহার বেদান্ত-ভাষ্যের ভূমিকায়, সর্ব্বপ্রথমেই আমাদিগকে বলিয়া দিয়াছেন। ভূমিকায়, অবিদ্যাশব্দের অর্থ নির্দ্দেশ করার এই উদ্দেশ্য তাঁহার ছিল যে, তিনি বেদান্তদর্শনে ও অন্যান্যস্থানে যেখানেই 'অবিদ্যা' শব্দটী ব্যবহার করিবেন, সর্ব্বত্র সেই অর্থেই উহাকে বুঝিতে হইবে। কিন্তু একথাটা ভুলিয়া, 'অবিদ্যা-কল্পিত' শব্দটী দেখিয়াই, অনেকে সিদ্ধান্ত করিয়া বসিয়াছেন যে, তবে ত শঙ্কর, জগৎ ও জীবকে অলীক, মিথ্যা বলিয়াই উড়াইয়া দিয়াছেন !!

কি অর্থে শঙ্কর, 'অবিদ্যা' শব্দ ব্যবহার করিয়াছেন ?

আমরা এই গ্রন্থের দ্বিতীয় অধ্যায়ে, শঙ্কর-ভাষ্য হইতে পাঠকবর্গকে দেখাইয়াছি যে, বিষয়েন্দ্রিয়-যোগে, আত্মায়, কতকগুলি গুণ, ধর্ম্ম বা বিকারের অভিব্যক্তি হইয়া থাকে ; এবং এই সকল গুণ বা ধর্ম্মের মধ্যে, আত্মার যেটী স্বরূপ, সেটী অবিকৃত থাকিয়া যায় ; তাহার স্বাতন্ত্র্য ও একত্ব পরিস্ফুট থাকে। এই ধর্ম্ম বা বিকার-গুলি আত্মায়, 'জ্ঞেয়'-(Object)-রূপেই অনুভূত হইয়া থাকে। স্বরূপটী স্বতন্ত্র বলিয়া, আত্মা ইহাদের 'জ্ঞাতা' (Subject)। কিন্তু এই ধর্ম্ম বা বিকারগুলিকে আত্মার উপরে "অধ্যারোপিত" করিয়া যদি আত্মার সেই 'স্বাতন্ত্র্য'টাকে বিলুপ্ত করিয়া, ঐ ধর্ম্ম বা বিকারসমষ্টিকেই আত্মা বলিয়া ধরিয়া লওয়া যায়, তাহা হইলে—ইহারই নাম "অবিদ্যা"*। অবিদ্যার প্রভাবে, আমরা আত্মাকে এইরূপেই মনে করিয়া লই। 'জ্ঞেয়' বিকার বা ধর্ম্মগুলির মধ্যে, 'জ্ঞাতা' আত্মার স্বাতন্ত্র্য ও একত্ব সর্ব্বদাই পরিস্ফুট থাকে,—একথাটা আমরা একেবারে ভুলিয়া যাই। একটা বাহ্য বস্তুর সম্পর্কে, আত্মায় 'দুঃখ' নামক একটা অবস্থান্তর উদ্রিক্ত হইল। এই অবস্থান্তর-যোগে আত্মা যেন দুঃখাকারধারী একটা স্বতন্ত্র বস্তু হইয়া উঠিল,—'দুঃখী' হইয়া উঠিল। কিন্তু ঐ অবস্থান্তরের মধ্যেও, আত্মা যে স্বতন্ত্রই রহিয়াছেন, এ কথাটা আর আমার মনে উদিত হইল না†।

---

* Paul Deussen প্রভৃতি পণ্ডিতেরা শঙ্করের ব্যবহৃত এই 'অবিদ্যা শব্দের অর্থটী ভুলিয়া গিয়া—অবিদ্যাকল্পিত প্রভৃতির "মিথ্যা" (unreal) অর্থ করিয়াছেন।

† যদ্যপি আত্মা নিরংশঃ, তথাপি অধ্যারোপিতং তস্মিন্ বহ্বংশত্বং দেহেন্দ্রিয়-মনোবুদ্ধি-বিষয়বেদনা লক্ষণং" (ব্রহ্মসূত্র, ৪।১।২)। "মায়া-মাত্রং হি এতৎ যদাত্মনঃ অবস্থাত্রয়ত্বেন অবভাসনং"।

"পররূপাপত্তিমিব অপেক্ষ্য, তদুপশমাৎ সুষুপ্তে স্বরূপাপত্তিরুচ্যতে"—ব্রহ্মসূত্র।

ব্রহ্ম সম্বন্ধেও আমরা এই প্রকার ভুল করিয়া থাকি। প্রথম অধ্যায়ে আমরা দেখাইয়াছি যে, ব্রহ্মের একটী স্বতন্ত্র 'স্বরূপ' আছে। এই স্বরূপ হইতেই তাঁহার ইচ্ছাবশতঃ, নাম-রূপাত্মক জগৎ অভিব্যক্ত হইয়াছে। এই নাম-রূপাত্মক বিকার-গুলি অভিব্যক্ত হওয়াতে, ইহাদের যোগে, তাঁহার স্বরূপটী আপনাকে হারাইয়া, একটা স্বতন্ত্র বস্তু হইয়া উঠে নাই। আমরা কিন্তু "অবিদ্যার" প্রভাবে এই বিকার-গুলিকে তাঁহার উপরে "আরোপিত" করি, এবং তাঁহার স্বাতন্ত্র্য ভুলিয়া গিয়া তিনি যেন এই বিকারগুলির যোগে একটা স্বতন্ত্র বস্তু হইয়া উঠিয়াছেন,—ইহাই মনে করি। প্রকৃত-পক্ষে, ব্রহ্ম এই জগৎ হইতে স্বতন্ত্র। এই নাম-রূপাদি বিকারের মধ্যেও, সকল পরিবর্ত্তনের মধ্যেও, তিনি স্বতন্ত্রই রহিয়াছেন।

শঙ্কর বলেন যে, অবিদ্যার কাণ্ডই এইরূপ। যখন এই জগৎটা ব্রহ্ম হইতে অভিব্যক্ত হইল, তখন, আমাদের মনে হয় যেন, এই অভিব্যক্ত জগতের যোগে, ব্রহ্ম—একটা সম্পূর্ণ 'স্বতন্ত্র বস্তু' হইয়া উঠিলেন। অন্য বস্তুর যোগে তিনিও যেন অন্য হইয়া উঠিলেন,—একটা ভিন্ন বস্তু হইয়া উঠিলেন। আমরা মনে করি যে, তাঁহার স্বরূপটা মরিয়া গিয়া, একটা সম্পূর্ণ নূতন বস্তু (এই জগৎটা) যেন উপস্থিত হইল। এইরূপে আমাদের দৃষ্টি, কেবল এই বিকার-গুলিতেই আবদ্ধ হইয়া পড়ে। এই বিকার-গুলিকে, ব্রহ্ম হইতে যেন স্বতন্ত্র, স্বাধীন বস্তু বলিয়াই মনে হইতে থাকে*। এই প্রকারে, তিনি যেন প্রত্যেক বিকারের যোগে, একটা একটা স্বতন্ত্র বস্তুরূপে দেখা

---

* "যথা প্রকাশঃ সৌর অঙ্গুল্যাদ্যুপাধি-সম্পর্কাৎ ঋজুবক্রাদিভাবমিব প্রতিপদ্যতে ; এবং ব্রহ্মাপি পৃথিব্যাদ্যুপাধি সম্বন্ধাৎ তদাকারতামিব প্রতিপদ্যতে" (ব্রহ্মসূত্র, ৩।২।১৫, ১৮)। "পূর্ণং ব্রহ্ম তদেব—কার্য্যস্থং নামরূপোপাধিসংযুক্তং, অবিদ্যয়া, তস্মাৎ পরমার্থস্বরূপাৎ অন্যদিব প্রত্যবভাসমানং।...অবিদ্যাকৃতং ভূতমাত্রোপাধিসংসর্গজং অন্যত্বাবভাসং তিরস্কৃত্য"—ইত্যাদি(বৃহ° ভাষ্য, ৫।১।১)।

"আত্মনো বস্ত্বন্তরস্য প্রত্যুপস্থাপিকা 'অবিদ্যা'। অন্যদিব আত্মনো বস্ত্বন্তরমিব অবিদ্যয়া প্রত্যুপস্থাপিতং ভবতি।...অন্যত্বেন ব্রহ্মণঃ পরিকল্প্যমানানি অন্যানি" (বৃ° ভা°, ৪।২।৩১, ৩২)। "নিত্যো হি আত্মভাবঃ সর্ব্বস্য, অতদ্বিষয়ইব প্রত্যবভাসতে" (৪।৪।২১।) পাঠককে একটী বিষয় লক্ষ্য করিতে এস্থলে অনুরোধ করিতেছি। এই সকল "ইব" শব্দের প্রয়োগ দেখিয়া Paul Deussen বলিয়াছেন যে, শঙ্কর জগতের বস্তুগুলিকে মিথ্যা বলিয়া উড়াইয়া দিয়াছেন !! Paul Deussen শঙ্করের তাৎপর্য্য বুঝিতে পারেন নাই বলিয়া আমাদের বিশ্বাস।

দিলেন। শঙ্কর ইহাকে 'অবিদ্যার কল্পনা', 'মিথ্যাজ্ঞান' বলিয়া নির্দ্দেশ করিয়াছেন।

কিন্তু আমরা অবিদ্যার প্রভাবে, বুদ্ধির দোষে, ব্রহ্মকে নানা অংশে বিভক্ত, নানাবিকারবিশিষ্ট মনে করিতেছি বলিয়াই কি, প্রকৃতপক্ষে তিনি তাহাই হইয়াছেন? আমরা বুদ্ধির দোষে যাহাই মনে করি না কেন, তিনি প্রকৃতপক্ষে আপন স্বাতন্ত্র্য হারান নাই। তিনি আপনি অবিকৃত থাকিয়াই জগতে প্রবিষ্ট আছেন এবং জগতের বিকার-গুলিকে বাঁধিয়া রাখিয়াছেন। তিনি এই বিকার যোগে, কোন স্বতন্ত্র বস্তু হইয়া উঠেন নাই। সুতরাং এই জগৎ—স্বতন্ত্র স্বাধীন বস্তু হইতে পারে না *। তাঁহাকে ছাড়িয়া, তাঁহা হইতে স্বতন্ত্র হইয়া থাকিতে গেলে, জগতের বিকারগুলি ধূলিচূর্ণবৎ খসিয়া পড়িবে †।

পাঠক তাহা হইলেই দেখিতে পাইতেছেন যে, শঙ্কর কি ভাবে এ জগৎকে অসত্য, মিথ্যা বলিয়াছেন। তিনি কোথাও এই জগৎকে, জগতের বিকার-গুলিকে, উড়াইয়া দেন নাই।

আমরা এই স্থলেই আর একটা বিষয়ে পাঠকের মনোযোগ আকর্ষণ করিতেছি। যদি জগৎ বা জগতের বিকারগুলি একান্ত ভিন্ন বস্তু হয়, তবে ত ব্রহ্ম, এই সকল ভিন্ন বস্তুর যোগে, নিজেও ভিন্ন হইয়া যাইতে পারেন। কিন্তু জগৎ বা জগতের বিকার-গুলিকে কখনই ভিন্ন বস্তু বলা যাইতে পারে না। জগতের বিকারগুলি আসিল কোথা হইতে? ইহারা ত ব্রহ্মস্বরূপ হইতেই অভিব্যক্ত হইয়াছে। সুতরাং, ইহারা তাঁহার স্বরূপ ছাড়া, অন্য কোন অতিরিক্ত বা ভিন্ন স্বরূপ পাইবে কেমন করিয়া? তাঁহার স্বরূপ ছাড়া, ইহাদের নিজের কোন স্বতন্ত্র স্বরূপ নাই ‡। দ্বিতীয়তঃ, ইহারা নিজে কোন

---

* অবিদ্যাপবিকল্পিতেন দোষেণ তদ্বিষয়ং পারমার্থিকং বস্তু ন দুষ্যতি। মরীচ্যম্ভসা উষরদেশঃ ন পঙ্কীক্রিয়তে। জ্ঞেয়েন জ্ঞাতুঃ সংসর্গানুপপত্তেঃ। যদি হি সংসর্গঃ স্যাৎ, জ্ঞেয়ত্বমেব নোপপদ্যতে। ন চ মিথ্যাজ্ঞানং পরমার্থবস্তু দুষয়িতুং সমর্থং। ন হি উষরদেশং পঙ্কীকর্ত্তুং শক্নোতি মরীচ্যুদকং" (গীতা ভা' ১৩।২)। "বুদ্ধিপরিকল্পিতেভ্যঃ সদবয়বেভ্যঃ বিকার-সংস্থানোপপত্তেঃ……একমেবাদ্বিতীয়ং পরমার্থতঃ 'ইদং'-বুদ্ধি-কালেপি" (ছা' ভা', ৬।২।২)।

† "নহি কার্য্যং কারণোপষ্টম্ভমন্তরেণ অবিভ্রংসমানং স্থাতুমুৎসহতে" (ছা' ভা')।

‡ বিশেষাণাং সামান্যস্বরূপাতিরিক্ত স্বরূপাভাবাৎ" (বৃহ°) "যোহি তক্ষ-সত্ত্বাদিকং জগৎ আত্মনোঽন্যত্র স্বাতন্ত্র্যেণ লব্ধ-সত্তাকং পশ্যতি, তং মিথ্যাদর্শিনং" ইত্যাদি (ব্রহ্মসূত্র)

ক্রিয়া করিতেও সমর্থ নহে। চেতনের দ্বারা প্রেরিত হইয়াই ইহারা স্ব স্ব ক্রিয়া নির্ব্বাহ করে[*]। তৃতীয়তঃ, এই বিকার-গুলির নিজের কোন প্রয়োজনও নাই। ইহারা চেতনের প্রয়োজন সাধন করিবে বলিয়াই পরস্পর সংহত হইয়া ক্রিয়া করিয়া থাকে[†]। পাঠক, তাহা হইলেই দেখুন, যাহা অপরের স্বরূপের উপরে নির্ভর করে; যাহা অপরের দ্বারা প্রেরিত হইয়া ক্রিয়া করে; এবং যাহা অপরের প্রয়োজন সাধন করে;—তাহা কখনই কোন 'স্বতন্ত্র' বস্তু, 'ভিন্ন' বস্তু, স্বাধীন বস্তু হইতে পারে না। জীব সম্বন্ধেও এ কথা প্রযোজ্য[‡]। সুতরাং, জগৎ বা জীব—কেহই ব্রহ্ম হইতে স্বতন্ত্র বস্তু হইতে পারে না। ব্রহ্মই বা ইহাদের যোগে, একটা স্বতন্ত্র বস্তু হইয়া পড়িবেন কি প্রকারে?

বেদান্তের নানাস্থানে এই প্রকার কথা আছে—

> "তত্ত্বজ্ঞান উপস্থিত হইলে কে কাহাকে দেখিবে? কে কাহাকে শুনিবে? দ্বিতীয় বস্তু হইতে ভয় জন্মিয়া থাকে; কিন্তু তখন দ্বিতীয় বস্তু কোথায় যে তাহা হইতে ভয় জন্মিবে?"...ইত্যাদি।[§]।

—অনেকে এই সকল উক্তি দেখিয়াই মনে করিয়া লইয়াছেন যে, তবে ত বেদান্ত জগতের বস্তুগুলিকে উড়াইয়া দিয়াছেন। কিন্তু পাঠক, শঙ্করের সিদ্ধান্ত স্মরণ করুন্। এ সকল কথায় জগৎ উড়িয়া যায় না! এ সকলের অর্থ এই যে, জগতের কোন বস্তুই প্রকৃত পক্ষে ব্রহ্ম হইতে স্বতন্ত্র নহে। কোন বস্তুকেই ব্রহ্ম হইতে স্বতন্ত্র করিয়া লওয়া যায় না। ব্রহ্ম হইতে স্বতন্ত্র করিতে গেলেই, তাঁহাকে ছাড়িয়া থাকিতে গেলেই, জগৎ চূর্ণ হইয়া পড়িবে।

(*b*) 'অবিদ্যা' শব্দের কিরূপ অর্থ শঙ্কর করিয়াছেন, তাহা দেখা হইল। বেদান্তে আরো দুইটী শব্দ ব্যবহৃত হইয়াছে। ব্রহ্মের বর্ণনায় অনেক

---

[*] "প্রাণঃ সর্ব্বপ্রাণভৃৎক্রিয়াত্মকঃ......সূত্রসংজ্ঞকং জগতো বিধারয়িতৃ...অন্ত্যাপি অন্তর্যামিনং...... তস্যৈব সূত্রস্য নিয়ন্তারং বিদ্যাৎ" (বৃহ°)। "জগৎ ব্রহ্মণো বিভ্যৎ নিয়মেন স্বব্যাপারে প্রবর্ত্ততে" (ব্রহ্মসূত্র)।

[†] "অচেতনে স্বার্থানুপপত্তেঃ"। "তচ্চ একার্থবৃত্তিত্বেন সংহননং...অন্তরেণ অসংহতং ন ভবতি"—ইত্যাদি।

[‡] জীবের স্ব স্ব প্রয়োজন থাকিলেও, সকল প্রয়োজনই—মূল ভগবৎ-প্রয়োজনেরই নিতান্ত অনুগত। "লোকপ্রয়োজনবিজ্ঞানবতা মিলিতৌ ইত্যাদি,—বৃ° ভা° ৩।৮।৯

[§] "যস্য সর্ব্বমাত্মৈবাভূৎ, তৎ কেন কং পশ্যেৎ কেন কং শৃণুয়াৎ?"—ইত্যাদি।

স্থলে—'নেতি' 'নেতি' শব্দ ব্যবহৃত হইয়াছে। কোথাও বা—'নানাত্ব নাই' **বলা হইয়াছে**। "যে ব্যক্তি ব্রহ্মে নানাত্বকে দেখে, অনেককে দেখে, সে মৃত্যু **হইতেও** মৃত্যুকে প্রাপ্ত হয়"—এ কথাও বলা হইয়াছে। পাঠক, এই সকল **দেখিয়াই** অনেকে মনে করিয়া লইয়াছেন যে, শঙ্করাচার্য্য এই নানাত্বপূর্ণ জগৎটাকে উড়াইয়া দিয়াছেন!

কিন্তু এই শব্দগুলি কিরূপ তাৎপর্য্যে শঙ্কর ব্যবহার করিয়াছেন, তাহা তিনি নিজেই বলিয়া দিয়াছেন। বেদান্ত-দর্শনের ৩৷২৷২২ সূত্রের ভাষ্যে, বেদান্তে ব্যবহৃত 'নেতি' 'নেতি' শব্দের তাৎপর্য্য নির্ণয় করিতে গিয়া, **শঙ্কর** বলিতেছেন যে,—জগতে সূক্ষ্ম ও স্থূলাকারে যে সকল গুণ, ধর্ম্ম বা ক্রিয়াদি অভিব্যক্ত হইয়াছে, সেইগুলি লইয়াই ত সংসার। শব্দ-স্পর্শ-রূপ-রসাদি বাহ্য বিষয় এবং ইন্দ্রিয়, মন, প্রাণ প্রভৃতি আন্তর শক্তি—এইগুলি দ্বারাই ত জগতের তাবৎ বস্তু নির্ম্মিত। সুতরাং, যাহাকে ব্রহ্ম বলিতেছ, ইহারাই ত সেই ব্রহ্মের রূপ বা আকার। এ সকল ছাড়া আবার ব্রহ্ম কোথায়? শঙ্কর বলিতেছেন যে, এই প্রকারে ব্রহ্মের স্বতন্ত্রতা ভুলিয়া, যদি **ব্রহ্মকে** এই সকল গুণ বা ধর্ম্মবিশিষ্ট বলিয়া মনে করা যায়, তাহা হইলেই ভুল হইল। বেদান্তে 'নেতি' 'নেতি' শব্দদ্বারা, ব্রহ্মের এই প্রকার আকার বা রূপ নিষিদ্ধ হইয়াছে। জগতে অভিব্যক্ত সর্ব্বপ্রকার গুণ বা ধর্ম্ম হইতে **ব্রহ্ম স্বতন্ত্র**; তিনি এই সকল গুণ বা ধর্ম্ম-বিশিষ্ট নহেন। সকল প্রকার গুণ বা ধর্ম্মের মধ্যে তাঁহার স্বাতন্ত্র্য ও একত্ব ঠিক রহিয়াছে। সুতরাং তাঁহাকে এই সকল 'ধর্ম্ম-বিশিষ্ট' মনে করা যাইতে পারে না। শঙ্কর এই কথা আমাদিগকে বলিয়া দিয়াছেন। পাঠক তাহা হইলেই দেখিতেছেন যে, 'নেতি' 'নেতি' শব্দদ্বারা জগতের কোন বস্তুকে উড়াইয়া দেওয়া হয় নাই*।

---

* "মূর্ত্তামূর্ত্তং রূপদ্বয়ং ব্রহ্মণি কল্পিতং পরামৃশতি প্রতিষেধত্বায়, শুদ্ধব্রহ্মস্বরূপ-প্রতিপাদনায়……তত্র কল্পিতরূপ-প্রত্যাখ্যানেন ব্রহ্মণঃ স্বরূপাবেদনং"। তদেতৎ সপ্রপঞ্চং ব্রহ্মণোরূপং…প্রতিষেধকং নঞং প্রতি উপনীয়তে।" "নেতি নেতীতি…প্রপঞ্চমেব ব্রহ্মণি কল্পিতং প্রতিষেধতি পরিশিনষ্টি ব্রহ্ম" (৩৷২৷২২) "নেতি-নেতি শব্দাভ্যাং সত্যস্ত সত্যং নির্দ্দিদিক্ষিতমিতি উচ্যতে সর্ব্বোপাধিবিশেষাপোহেন" (বৃভা°, ২৷৩,৬) ॥

এইরূপ, "নানাত্ব নাই"—একথাটার অর্থও, শঙ্করাচার্য্য, বেদান্তদর্শনের ২।১।১৪ সূত্রের ভাষ্যে নির্ণয় করিয়া দিয়াছেন। সে স্থলে শঙ্কর বলিয়াছেন যে—একটা বস্তুকে যুগপৎ 'এক' অথচ 'অনেক' বলিতে পারা যায় না। যাহা 'অনেক' বা 'নানা' হইয়াছে; যাহা নানা আকারে আকারিত, নানাধর্ম্ম-বিশিষ্ট,—তাহার আবার 'একত্ব' থাকিল কোথায়? সুতরাং ব্রহ্মকে এই জগদাকার-বিশিষ্ট, জগদাকারধারী একটা স্বতন্ত্র বস্তু,—বলিতে পারা যায় না। কেন না, তিনি ত আপন স্বাতন্ত্র্য হারাইয়া, এই জগদাকার ধারণ করেন নাই। এই জগতের মধ্যেও, তাঁহার স্বরূপের স্বাতন্ত্র্য ও একত্ব ঠিক্ আছে*। এই প্রকারে শঙ্করাচার্য্য ব্রহ্মে—"নানাত্ব নাই" বলিয়াছেন। পাঠক তাহা হইলেই দেখিতেছেন যে,—"নানাত্ব নাই", "যে নানাত্ব দেখে সে মৃত্যুকে প্রাপ্ত হয়"—এই সকল শব্দ দ্বারা জগতের কোন বস্তুকেই উড়াইয়া দেওয়া হয় নাই।

(*c*) বেদান্তে আর একটী শব্দ আছে; ইহাকে "বিশেষ-প্রতিষেধ" বা "বিশেষ-নিরাকরণ" বলে। ব্রহ্মে কোন প্রকার বিশেষ গুণ, ধর্ম্ম, ক্রিয়া, জাতি বা ভেদ নাই। ব্রহ্ম, সর্ব্বপ্রকার বিশেষত্ব-বর্জ্জিত। ব্রহ্ম স্থূল নহেন, সূক্ষ্ম নহেন, হ্রস্ব নহেন, দীর্ঘ নহেন। তাঁহাতে লোহিতাদি গুণ নাই।—এই প্রকারে তাবৎ বিশেষ বিশেষ বস্তু, গুণ ধর্ম্মাদি নিষিদ্ধ হইয়াছে। অনেকে এই নিষেধ দেখিয়াই মনে করিয়া লইয়াছেন যে, তাহা হইলে ত জগতের নাম-রূপাদি সকল বিশেষ বস্তুই উড়াইয়া দেওয়া হইয়াছে!

কিন্তু পাঠক, বেদান্তদর্শনের ৪।৩।১৪ সূত্রের ভাষ্যে ও অন্যান্য স্থানে, এই "বিশেষ-নিরাকরণের" তাৎপর্য্য শঙ্কর এই প্রকারে ব্যাখ্যা করিয়াছেন।—

---

* "নন্বনেকাত্মকং, ব্রহ্ম, যথা বৃক্ষোঽনেকশাখঃ। এবমনেকশক্তি-প্রবৃত্তিযুক্তং ব্রহ্ম?……নৈবং স্যাৎ।……(a) একত্বমেবৈকং পরমার্থিকং দর্শয়তি; (b) মিথ্যাজ্ঞানবিজৃম্ভিতঞ্চ নানাত্বং। উভয়-সত্যতায়াংহি কথং বিকারগোচরোপি জন্তুঃ অনৃতাভিসন্ধ ইত্যুচ্যতে?……নহি একস্য ব্রহ্মণঃ (a) পরিণাম-ধর্ম্মবত্বং (b) তদ্রহিতঞ্চ শক্যং প্রতিপত্তুং।……নহি কূটস্থস্য একস্য ব্রহ্মণঃ স্থিতিগতিবৎ অনেকধর্ম্মাশ্রয়ত্বং সম্ভবতি।……নচ, যথা (a) ব্রহ্মৈকত্বদর্শনং মোক্ষসাধনং, এবং (b) জগদাকার-পরিণামিত্বদর্শনং স্বতন্ত্রমেব ফলায় কল্পতে,……কিন্তু তৎ ব্রহ্মদর্শনোপায়ত্বেনৈব বিনিযুজ্যতে" (ব্রহ্মসূত্র, ২।১।১৪)। ভাষ্যের এই সকল "মিথ্যাজ্ঞানবিজৃম্ভিতঞ্চ নানাত্বং"—দেখিয়াই, আগাগোড়া না বিবেচনা করিয়াই, লোকে ঠিক করিয়া লইয়াছে যে, এই ত শঙ্কর জগৎকে উড়াইলেন!!!

সংসারে অভিব্যক্ত সকল বস্তু, সকল গুণ ও সকল ধর্ম্মাদি হইতে পৃথক করিয়া লইয়া ব্রহ্মকে বুঝিতে হয়। আমরা যে সকল 'বস্তু' দেখিতে পাই, হ্রস্ব-দীর্ঘ, অণুস্থূলাদি সেই সকল বস্তুর পরিমাণ বা ধর্ম্ম। ব্রহ্মে কোন প্রকার পরিমাণ বা ধর্ম্ম নাই। সুতরাং তাঁহাকে কোন বস্তু বলা যায় না। জগতে যাহা কিছু অভিব্যক্ত হইয়াছে ;—যে সকল শক্তি, গুণ, ক্রিয়া, বিকারাদি অভিব্যক্ত হইয়াছে ;—এ সকলের মধ্যে ব্রহ্মের স্বাতন্ত্র্য ও একত্ব পরিস্ফুট হইতেছে। কিন্তু অবিদ্যাচ্ছন্ন লোকেরা, তাঁহার এই স্বাতন্ত্র্য ও একত্ব (Identity) ভুলিয়া, তাঁহাকে এই সকল শক্তি-গুণাদি-বিশিষ্ট বলিয়াই মনে করে। "বিশেষ-নিরাকরণ" শব্দ দ্বারা, ব্রহ্মকে জগদাকার-বিশিষ্ট মনে করাটাই নিষিদ্ধ হইয়াছে ; জগৎ বা জগতের বস্তুগুলি নিষিদ্ধ হয় নাই *। —শঙ্কর ইহাই বলিয়া দিয়াছেন।

পাঠক তাহা হইলেই দেখিতেছেন যে, বেদান্তের সর্ব্বত্রই এই সকল নিষেধ-বাচক শব্দ ব্যবহৃত হইয়াছে এবং এই নিষেধের দ্বারা কোন স্থানেই জগতের বস্তু-গুলির নিষেধ করা হয় নাই বা জগতের বস্তু-গুলিকে উড়াইয়া দেওয়া হয় নাই। অবিদ্যার প্রভাবে লোকে, সংসারে অভিব্যক্ত ধর্ম্মাদি বা বিকার-গুলিকে ব্রহ্মে "অধ্যারোপিত" করিয়া,—তাঁহার স্বাতন্ত্র্য ভুলিয়া, —তাঁহাকে এই সকল 'ধর্ম্ম-বিশিষ্ট' বলিয়া মনে করে। জীবাত্মাকেও, দেহেন্দ্রিয়াদি ধর্ম্ম-বিশিষ্ট বলিয়াই মনে করে। সর্ব্বত্র ইহাই নিষিদ্ধ হইয়াছে†। এই জন্যই শঙ্করাচার্য্য, বেদান্তদর্শনের ৩।২।২১ সূত্রের ভাষ্যে

---

* অনেক-শক্তিত্বং ব্রহ্মণ ইতিচেৎ? ন; বিশেষ-নিরাকরণশ্রুতীনাং অনন্যার্থত্বাৎ" (৪।৩।১৪) "সর্ব্বত্র বিশেষনিরাকরণরূপঃ ব্রহ্মপ্রতিপাদনপ্রকারঃ" (৩।৩।৩৩)। "প্রপঞ্চমেব ব্রহ্মণিকল্পিতং প্রতিষেধতি" (৩।২।২২)—"প্রতিষিধ্যতে হি ব্রহ্মণোঽনেকাকারত্বং—'ন স্থানতোপি পরস্য উভয়লিঙ্গ মিত্যত্র" (৪।৪।৬)।

"অবিদ্যাধ্যারোপিত সর্ব্বপদার্থাকারৈঃ অবিশিষ্টতয়া দৃশ্যমানত্বাৎ"—গীতা ভাষ্য, ১৮।৫০

"বিশিষ্ট-শক্তিমত্ত্বপ্রদর্শনং, বিশেষপ্রতিষেধশ্চ—ইতি বিপ্রতিষিদ্ধং। ব্রহ্মণঃ সর্ব্ববিশেষপ্রতিষেধেনৈব বিজিজ্ঞাপয়িষিতত্বাৎ"—গী°, ১৩,১২

† অর্থাৎ বেদান্তের সর্ব্বত্র ইহাই তাৎপর্য্য যে, বিকার-গুলিকেই 'আত্মীয়' বলিয়া বা আত্মার ধর্ম্ম বলিয়া মনে করিলেই ভুল হইল।—

"যাবৎ কিঞ্চিৎ আত্মীয়ত্বাভিমতং সুখদুঃখরাগদ্বেষাদি, কাদাচিৎকত্বাৎ, অনাত্মেতি মন্তব্যং" (ছা° ভা°, ৮।৮।২)। "বিকারানেব তু……'আত্মাত্মীয়-ভাবেন' সর্ব্বো জন্তুঃ প্রতিপদ্যতে, স্বাভাবিকীং ব্রহ্মাত্মতাং

বলিয়াছেন যে, এই বিদ্যমান জগৎকে বিলয় করিয়া দেওয়া—উড়াইয়া দেওয়া—কাহারই সাধ্যায়ত্ত নহে। ব্রহ্মের স্বাতন্ত্র্য ভুলিয়া গিয়া, লোকে তাঁহাকে 'জগদাকার বিশিষ্ট' বলিয়া মনে করে, এই বোধটারই বিলয় করিতে হইবে*।

যাজ্ঞবল্ক্য, পত্নী মৈত্রেয়ীকে এই কথাটাই বুঝাইয়াছিলেন। বাহ্য বিষয়ের সহিত ইন্দ্রিয়ের যোগ হইলে, তদ্দারা আত্মায় কতকগুলি গুণ বা ধর্ম্মের অভিব্যক্তি হয়। অবিদ্যাচ্ছন্ন লোকেরা মনে করে যে এই সকল ধর্ম্মবিশিষ্ট যিনি, তিনিই ত আত্মা ; এ সকল ছাড়া আবার 'স্বতন্ত্র' আত্মা কোথায় ? মৈত্রেয়ী, আত্মাকে এই প্রকার নানাধর্ম্মবিশিষ্ট বলিয়াই মনে করিত। তাই, যখন সে শুনিল যে, বিদ্যাদ্বারা অবিদ্যার নাশ হইলে আত্মা যে নানাধর্ম্মবিশিষ্ট এই ভ্রান্তবুদ্ধি বিনষ্ট হইবে, তখন সে মনে করিল যে, তবে ত ধর্ম্মগুলিও থাকিল না ; বিষয় ও ইন্দ্রিয়ও থাকিল না ; আত্মাও থাকিল না। পত্নীর এই আশঙ্কার উত্তরে যাজ্ঞবল্ক্য বুঝাইয়াছিলেন যে, অবিদ্যা বিনষ্ট হইলে, বিষয়েন্দ্রিয়াদি নষ্ট হয় না ; সংসার নষ্ট হয় না ; আত্মাও নষ্ট হয় না। আত্মার স্বাতন্ত্র্য ভুলিয়া, আত্মাকে—সংসার-ধর্ম্মবিশিষ্ট বলিয়া একটা ভিন্ন বস্তু মনে করিয়াছিলে, কেবল সেই বোধটা নষ্ট হইবে†।

(৮) ভাষ্যকার বেদান্ত-ভাষ্যে যে কারণ ও কার্য্যের তত্ত্ব বিচার করিয়াছেন, ইহাতে অমূল্য সিদ্ধান্ত নিহিত রহিয়াছে ; আমাদের বিশ্বাস, সে

হিত্বা" (ব্রহ্মসূত্র, ২।১।১৪)। "সংসারাবাস্থায়াং বিকার-সাম্যমাপন্নঃ 'অহং জাতঃ জীর্ণঃ,—ইতি দেহেন্দ্রিয়াদি-ধর্ম্মমনুভবতি……তৎ পরিত্যজ্য, সদাত্মনা অভিনিস্পদ্যতে" (ছা° ভা°, ৮।১২।৩)। "প্রত্যয়ৈরেব প্রত্যয়েষু 'অবিশিষ্টতয়া' বিদিতং ভবতি ব্রহ্ম" (কেন—ভাষ্য)। বাহ্যাকারভেদবুদ্ধিনিবৃত্তিরেব আত্মস্বরূপাবলম্বনকারণং"—গী° ভাষ্য,) ৮।৫০

* যদি তাবৎ বিদ্যমানোয়ং প্রপঞ্চঃ……প্রবিলাপয়িতব্য ইত্যুচ্যেত, স পুরুষমাত্রেণ অশক্যঃ প্রবিলাপয়িতুং। ব্রহ্মৈব অবিদ্যাধ্যস্ত—প্রপঞ্চপ্রত্যাখ্যানেন আবেদয়িতব্যং, ততশ্চ অবিদ্যাধ্যস্তঃ নামরূপ-প্রপঞ্চঃ……প্রবিলীয়তে" (৩।২।২১)।

† কিংনিমিত্তোয়ং 'খিল্যভাবঃ' আত্মনঃ—'সুখী দুঃখীত্যাদি অনেকসংসারধর্ম্মোপদ্রুতঃ' ইতি ? উচ্যতে—কার্য্যকরণ-বিষয়াকার-পরিণতানি ভূতানি আত্মনো বিশেষাত্মখিল্য-হেতুভূতানি শাস্ত্রাচার্য্যোপদেশেন ব্রহ্মবিদ্যয়া নদীসমুদ্রবৎ প্রবিলাপিতানি বিনশ্যন্তি।……বিনাশীতু অবিদ্যাকৃতঃ 'খিল্যভাবঃ' 'বাচারম্ভনং বিকারো নামধেয়মিতি শ্রুত্যন্তরাৎ"—বৃহ° ভা°, ২।৪।১২

দিকে অনেকের দৃষ্টি যথাযথভাবে আকর্ষিত হয় নাই। হয় নাই বলিয়াই, জগতের মিথ্যাত্বের একটা বৃথা অপবাদ তাঁহাতে অর্পিত হইয়াছে।

(ক) একটা বস্তু হইতে যে, এক অবস্থার পর আর এক অবস্থা উৎপন্ন হইয়া থাকে, এই পর-পর জাত অবস্থাগুলিই সেই বস্তুটীর 'কার্য্য'। এই কার্য্য বা অবস্থান্তর-গুলিকে শঙ্কর, 'কারণ' হইতে 'অনন্য' বলিয়া নির্দ্দেশ করিয়াছেন। একথা আমরা পূর্ব্বে বলিয়াছি।

শঙ্কর বলিয়া দিয়াছেন যে, পূর্ব্ব-কালীন অবস্থাকে পরবর্ত্তী কালের অবস্থার 'কারণ' বলা যায় না। বস্তুটীই হইতেছে প্রকৃত 'কারণ',—যে বস্তুটী ক্রমে ক্রমে এক অবস্থা ছাড়িয়া অপর অবস্থা ধারণ করিতেছে। অবস্থাগুলি পরিবর্ত্তনশীল; এক অবস্থা বিনষ্ট হওয়ার পর, অপর অবস্থা উৎপন্ন হইয়া থাকে। কিন্তু সকল অবস্থার মধ্যেই বস্তুটী 'অনুগত' হইয়া চলিয়াছে। এই অনুগত স্বরূপটী, স্থির ও বিনাশরহিত। অবস্থার নাশে, এই স্বরূপটীর নাশ হয় না। অতএব, এই পরিবর্ত্তন-শীল অবস্থান্তর গুলির মধ্যে, যে স্বরূপটী অবিকৃত থাকিয়া 'অনুগত' রহিয়াছে, সেইটীই প্রকৃত 'কারণ'।

পাঠক শঙ্করের নিজের উক্তি শুনুন্—

"যেষ্বপি বীজাদিষু স্বরূপোপমর্দ্দো লক্ষ্যতে, তেষ্বপি—নাসাবুপমৃদ্যমানা পূর্ব্বাবস্থা উত্তরাবস্থায়াঃ কারণমভ্যুপগম্যতে। অনুপমৃদ্যমানানামেব অন্বয়ায়িনাং বীজাদ্যবয়বানাং অঙ্কুরাদিকারণভাবাভ্যুপগমাৎ"।*

কার্য্য-কারণ সম্বন্ধে শঙ্করের একটী বিখ্যাত সিদ্ধান্ত এই যে, কার্য্য-গুলি উহাদের কারণ হইতে 'অনন্য'। কোন অবস্থাকেই উহার কারণ হইতে,—ভিন্ন করিয়া, স্বতন্ত্র করিয়া, অন্য করিয়া লওয়া যায় না। বস্তুর পূর্ব্বাবস্থা হইতে পরের অবস্থায় একটা বিশেষত্ব উপস্থিত হয়। উহার পূর্ব্বাবস্থায় এই বিশেষত্ব দৃষ্ট হয় নাই। পূর্ব্বাবস্থা গিয়া অপর-অবস্থা উৎপন্ন হওয়ার অর্থই

---

* বেদান্ত-ভাষ্য, ২।২।২৬। বিপক্ষের মত খণ্ডন করিবার সময়ে, গ্রন্থকারের আপন মতটী স্পষ্টতর ও উজ্জ্বলতর হইয়া উঠে। কোন গ্রন্থকারের মত স্পষ্ট বুঝিতে হইলে, তিনি পরমতখণ্ডনের সময়ে কি বলিয়াছেন, তাহাই দেখিতে হয়। এস্থলেও শঙ্কর পরমত খণ্ডন করিতেছেন।

এই। পূর্ব্বে যাহা ছিল, তদপেক্ষা পরের অবস্থায়—কিছু বিশেষ, কিছু অধিক, কিছু বৃদ্ধি, কিছু নূতন,—উৎপন্ন হইয়াছে। ইহা না বলিলে 'কার্য্য-কারণ' কথাটাই উড়িয়া যায়, 'প্রকৃতি-বিকার' বলিয়া কোন ভেদই থাকে না[*]। যতদিন পর্য্যন্ত বস্তুটীর পূর্ণবিকাশ, পূর্ণ অভিব্যক্তি শেষ না হইতেছে, ততদিন ক্রমাগত এই বিশেষত্ব, এই আধিক্য, এই বৃদ্ধি চলিতেই থাকিবে। কিন্তু এই সকল অবস্থা-ভেদের মধ্যে, কোন একটী অবস্থাকেও ঐ বস্তুটী হইতে পৃথক করিয়া, স্বতন্ত্র করিয়া—লওয়া যায় না। বস্তুটীর সম্পূর্ণ-বিকাশ দেখিতে হইলে, আমাদিগকে একেবারে চরম অবস্থা পর্য্যন্ত অপেক্ষা করিতে হইবে। বীজাবস্থা হইতে আরম্ভ করিয়া, ক্রমে ক্রমে, অঙ্কুরাবস্থা—শাখাপ্রশাখা অবস্থা প্রভৃতি—সমস্ত পর-পর অবস্থাগুলি—শেষ পর্য্যন্ত লক্ষ্য করিতে হইবে; তবে বৃক্ষটীকে সম্পূর্ণরূপে বুঝা যাইবে[†]। শেষ-অবস্থায় বৃক্ষটীর পূর্ণ অভিব্যক্তি হইয়া থাকে। কিন্তু বৃক্ষটীর গোড়ার অবস্থা হইতে আরম্ভ করিয়া উহার পূর্ণ অভিব্যক্তি-লাভের শেষাবস্থা পর্য্যন্ত—কোন অবস্থাকেই বৃক্ষ হইতে স্বতন্ত্র করিয়া, পৃথক্ করিয়া লওয়া যায় না। কেন না, প্রথম হইতে আরম্ভ করিয়া শেষ পর্য্যন্ত, পর-পর উৎপন্ন সকলগুলি অবস্থা বা বিকারের মধ্য দিয়াই বৃক্ষটী, পূর্ণাভিব্যক্তি লাভ করিয়াছে। সুতরাং উহার কোন্ অবস্থাটীকে তুমি উহা হইতে পৃথক্ করিয়া লইবে?

---

[*] বহুস্যাং—প্রজায়েয়;—প্রকর্ষেণ জায়েয়। 'প্রকর্ষো' নাম—পূর্ব্বস্মাৎ 'আধিক্যং''—বিদ্যারণ্য (অনুভূতি প্রকাশ)।

"তর্হি……'অতিশয়বত্ত্বাৎ'……সৎকার্য্যবাদসিদ্ধিঃ"। কার্য্যাকারোপি কারণস্য আত্মভূতএব। ন হি 'বিশেষ'দর্শনমাত্রেণ বস্তন্যত্বং ভবতি" (বে° ভা°, ২।১।১৮)। "স এব 'প্রসারিতঃ' (Expansion)……প্রসারণেন অভিব্যক্তো গৃহ্যতে" (২।১।১৯)। "তেম্বেব……জীবনাৎ 'অধিকং'(Increment, lift)…কার্য্যান্তরং নিবর্ত্ততে"—ইত্যাদি (২।১।২০)। "পৃথিবীত্বসামান্যান্বিতানাং……অনেকবিধং 'বৈচিত্র্যং' Developement দৃশ্যতে" (২।১।২৩)। "বৃদ্ধ্যাখ্যং বিকারং গচ্ছৎ"। "উপচীয়তে……উচ্ছূনতাং গচ্ছতি" (মু° ভা° ১।১।৮)

[†] স্বজাতীয়-কার্য্যোৎপাদন 'সামর্থ্যং'—উত্তরোত্তর-সর্ব্বকার্য্যেষু অনুস্যূতং—গীতা। ক্ষণিকত্ববাদ-খণ্ডনের সময়ে শঙ্করাচার্য্য এই যুক্তিই অবলম্বন করিয়াছেন। কারণকে উহার সমুদয় ফলোৎপত্তিকাল-পর্য্যন্ত থাকিতেই হয়। "ফলকালাবস্থায়িত্বং"। "বস্তুধর্ম্মী……পল্লবাদিরূপ-শেষাবস্থয়া ব্যজ্যতে"—ইত্যাদি (বি° ভি°)। হেতু-স্বভাবানুপরক্তস্য ফলস্য উৎপত্ত্যসম্ভবাৎ।…হেতু-স্বভাবস্য ফলকালাবস্থায়িত্বঞ্চ" —(বে° ২।২।২০ & ২।১।১৫) "সর্ব্বাত্মকস্য সর্ব্বফল সম্বন্ধোপপত্তেঃ"—ছা° ভা°।

সুতরাং, বুঝিতে পারা যাইতেছে যে, বৃক্ষটীকে বুঝিতে হইলে, উহাকে উহার সকল অবস্থা-গুলির সঙ্গে করিয়াই বুঝিতে হইবে; কোন অবস্থাকে বাদ্ দিলে চলিবে না। আবার, অবস্থা-গুলিকে বুঝিতে হইলে, সকল অবস্থার সঙ্গে বৃক্ষটীকেও 'অনুগত' করিয়া লইয়া বুঝিতে হইবে। অবস্থাগুলিকে বাদ্ দিয়া, স্বতন্ত্র করিয়া লইয়া—বৃক্ষকে বুঝা যায় না। কেন না, বৃক্ষটী ঐ সকল পর-পর-উৎপন্ন অবস্থার মধ্যেই আত্ম-প্রকাশ করিয়াছে*। আবার বৃক্ষকে একেবারে বাদ্ দিয়া, স্বতন্ত্র করিয়া ফেলিয়া,—উহার ঐ অবস্থাগুলিকে বুঝিতে পারা যায় না। কেননা, ঐ অবস্থাগুলিই একটীর পর একটী—ঐ বৃক্ষের স্বরূপটীকে ক্রমে ক্রমে প্রকাশিত করিয়া দিয়াছে।

এই মহান্ তত্ত্ব বুঝাইবার জন্যই শঙ্কর, কারণকে উহার কার্য্যবর্গের মধ্যে 'অনুগত' বলিয়া, 'অনুযায়ী' বলিয়া, 'অন্বিত' বলিয়া উল্লেখ† করিয়াছেন। এবং ঐ কার্য্যগুলিকে উহাদের কারণ হইতে 'অনন্য' বলিয়া নির্দ্দেশ‡ করিয়াছেন।

আর একটা কথা লক্ষ্য করিতে হইবে। আমরা পূর্ব্বে বলিয়াছি যে, পর-পর অবস্থা-গুলিতে বস্তুটীর ক্রমেই কিছু 'বিশেষত্ব', কিছু 'আধিক্য', কিছু 'বৃদ্ধি', কিছু 'প্রসার' লক্ষিত হইতে থাকে। এই আধিক্যই প্রমাণ করে যে, প্রকৃতপক্ষে কারণটী কার্য্য-গুলি হইতে—'অবস্থা-গুলি' হইতে—স্বতন্ত্র (Transcedent,) ঐ গুলির বাহিরে, ঐ গুলির অতীত হইয়া—'অনুগত'। কেন না, পর-পর অবস্থায় ক্রমেই যে বস্তুটী, পূর্ব্ব-পূর্ব্ব অবস্থাপেক্ষা 'বৃদ্ধি'

---

* সামান্যং হি……বিশেষান্ ধারয়তি স্বরূপপ্রদানেন……সামান্যানন্বিদ্ধানাং বিশেষাণামদর্শনাৎ"। সামান্যস্য গ্রহণেন তদ্গতা বিশেষা গৃহীতাঃ স্যুঃ। নতু ত এব নির্ভিদ্য গ্রহীতুং শক্যন্তে" ।—বৃ' ভা'. ২।৪,৬ "তস্যৈব তে সংস্থানমাত্রা আসন্"। "যস্তু চ যস্মাদাত্মলাভঃ, স তেন অপ্রবিভক্তো দৃষ্টঃ"—বৃ', ১।৬।১

† "প্রত্যভিজ্ঞাবলেন সর্ব্বেষু বিকারেষু 'অন্বয়া'বিচ্ছেদ-দর্শনাৎ"। "অন্বয়ি-দ্রব্যমেব সর্ব্বত্র কারণং ভবতি. ন পিণ্ডাদিবিশেষঃ—অনন্বয়াৎ, অব্যবস্থানাচ্চ" (ছা')। "অনুগতঃ……ব্যাবৃত্তেভ্যঃ……স্বতঃ" (গী)। "কারণং ব্রহ্ম—ত্রিষু কালেষু (পূর্ব্বাপরকালেষু) 'সত্ত্বং' ন ব্যভিচরতি" (বে' ভা', ২।১।১৬)। "অনুপমৃদ্যমানানামেব অনুযায়িনাং……কারণভাবাভ্যুপগমাৎ"। অভাবাচ্চ ভাবোৎপত্তৌ অভাবান্বিত মেব সর্ব্বং কার্য্যং স্যাৎ. নচৈবং দৃশ্যতে" (২।২।২৬)—ইত্যাদি।

‡ "নহি ইদানীমপীদং কার্য্যং কারণাত্মানমন্তরেণ 'স্বতন্ত্র'মেবাস্তি"। "ত্রিষ্বপি কালেষু কার্য্যস্য কারণানন্যত্বং শ্রাব্যতে" (২।১.৮—৯)।

প্রাপ্ত হইতে থাকে, ইহার কারণ কি? পূর্ব্বাবস্থার মধ্যে খুজিলে, পরাবস্থার মধ্যে উৎপন্ন বৃদ্ধিকে ত আমরা পাই না। অঙ্কুরকে ত উহার পূর্ব্বাবস্থা বীজের মধ্যে, আমরা দেখি না! তবে কোথা হইতে এই বৃদ্ধি আসিল? এতদ্দ্বারা ইহাই প্রমাণিত হয় যে, প্রত্যেক অবস্থার বা কার্য্য-ভেদের অন্তরালে,—সেই অবস্থা হইতে স্বতন্ত্র হইয়া, বস্তুর স্বরূপটী উপস্থিত আছে; সেই স্বরূপ হইতেই এই বৃদ্ধি আসিতেছে। তাহাই আপনাকে ক্রমাভিব্যক্ত করিতেছে। ব্রহ্ম এবং ব্রহ্ম হইতে ক্রম-বিকাশিত এই জগৎ সম্বন্ধেও, এই কথাই বুঝিতে হইবে[*]।

শঙ্কর বলিয়াছেন—'দর্শকবর্গকে অভিনয় দেখাইবার সময়ে, একটী নট যেমন, ক্রমে ক্রমে—একটার পর অপর একটা—নাটকীয় পাত্রের ভূমিকা গ্রহণ করে, অথচ সেই নটটী আপন স্বরূপে ঠিক্ থাকে;—একবার সে দশরথের ভূমিকা গ্রহণ করিয়া দর্শকবর্গের সম্মুখে উপস্থিত হইল; আবার পরে সেই নটই, কৌশল্যার ভূমিকা লইয়া আপনাকে দেখা দেয়; পরক্ষণেই আবার রামের ভূমিকা লইয়া দেখা দেয়;—এই জগতের মূল-কারণ ব্রহ্মও তদ্রূপ, জগতের কার্য্য-বর্গের মধ্যে ক্রমে ক্রমে—এক অবস্থা হইতে অপর অবস্থায়—আপনাকে অভিব্যক্ত করিতেছেন। অথচ তিনি আপন স্বরূপে ঠিক্ই রহিয়াছেন'[†]।

এই অভিপ্রায়েই শঙ্কর বলিয়া দিয়াছেন যে, 'বেদান্তে 'পরিণামবাদ'কে প্রত্যাখ্যান করিবার আবশ্যকতা নাই। 'পরিণাম-বাদ'কে রাখিয়াই 'বিবর্ত্ত-বাদের' প্রাধান্য রক্ষিত হইতে পারে'[‡]।

---

[*] "উত্তরোত্তরং আবিস্তরত্বমাত্মনঃ"—ঐ° আ° শঙ্কর-ভাষ্য। "একস্যাপি কূটস্থস্য চিত্ত-তারতম্যাৎ, জ্ঞানস্থৈশ্বর্য্যানাং অভিব্যক্তিঃ পরেণ পরেণ ভূয়সী ভবতি"—বে° ভাষ্য। "স্বরূপানুপমর্দ্দেনৈব অনেকাকারা সৃষ্টিঃ পঠ্যতে"। "স্বেন চ ভবিষ্য দ্রূপেণ ঘটো বর্ত্ততে"—ইত্যাদি বৃ° ভা°, ১।২।১ দেখ।

[†] তথা মূলকারণমেব আ-অন্ত্যাৎ কার্য্যাৎ তেন তেন কার্য্যাকারেণ নটবৎ সর্ব্বব্যবহারাস্পদত্বং প্রতিপদ্যতে"—ব্র° সূ°, ২।১।১৮।……কারণে সত্বং অবর-কালীনস্য কার্য্যস্য শ্রূয়তে" (২।১।১৬)। এই জন্যই ভাষ্যকার বলিয়া দিয়াছেন যে—"অনন্যত্বেঽপি কার্য্যকারণয়োঃ, কার্য্যস্য কারণাত্মত্বং, নতু কারণস্য কার্য্যাত্মত্বং" (২।১।৯)। কারণ উহার কার্য্যগুলির অন্তরালে 'স্বতন্ত্র' হইয়া অবস্থিত; কিন্তু কার্য্যাবস্থাগুলি কারণ হইতে স্বতন্ত্র থাকিতে পারে না।

[‡] সূত্রকারোপি পরমার্থাভিপ্রায়েণ তদনন্যত্বমিত্যাহ……অপ্রত্যাখ্যায়ৈব কার্য্য-প্রপঞ্চং পরিণাম-প্রক্রিয়াঞ্চ আশ্রয়তি"—ইত্যাদি, ব্রহ্ম সূ,° ২।১।১৭

শঙ্করাচার্য্যের এই সকল অমূল্য সিদ্ধান্ত লোকে লক্ষ্য করিয়া দেখে না, ইহাই বড় দুঃখের বিষয়! পাঠক বুঝিতেছেন, শঙ্করের এই প্রকার সিদ্ধান্তে জগতের 'অসত্যতার' কথা আদৌ আসিতেছে না। তিনি ইহাই বলিতেছেন যে, অভিব্যক্ত অবস্থাগুলির অন্তরালে বস্তুর স্বরূপটী উপস্থিত থাকে এবং সেই স্বরূপটিকে বুঝিতে হইলে,—উহার বিকাশগুলির প্রথম হইতে শেষ পর্য্যন্ত—সমুদয় বিকাশগুলির মধ্য দিয়া তাহাকে বুঝিতে হয়। বস্তুর যেটী স্বরূপ, সেই স্বরূপটী উহার যাবতীয় বিকাশ বা অবস্থান্তর-গুলিকে আপনারই অন্তর্ভুক্ত করিয়া লইয়াই অবস্থান করে। সুতরাং অবস্থান্তর গুলির সঙ্গে সঙ্গেই স্বরূপটীও আপনাকে বুঝাইয়া দেয় *। জগতের মধ্য দিয়াই জগৎ-কারণ ব্রহ্মকে বুঝিতে পারা যায়। কেন না, তিনি জগতের মধ্যেই আপন-স্বরূপকে অভিব্যক্ত করিতেছেন। শঙ্কর এই অমূল্য তত্ত্বেরই নির্দ্দেশ করিয়াছেন। ইহাতে, জগতের অলীক হইয়া উড়িয়া যাইবার কথা আইসে না।

এই তত্ত্ব বিস্মৃত হইয়া, যদি মনে কর যে, ব্রহ্ম আপন স্বরূপকে নিঃশেষে এই জগতের বিবিধ বিকাররূপে পরিণত করিয়াছেন; এই বিকার-গুলি ছাড়া আর ব্রহ্মের স্বতন্ত্র কোন স্বরূপ নাই; এই বিকার-গুলির সমষ্টিই ব্রহ্ম;—তাহা হইলেই তুমি ভুল বুঝিলে। ব্রহ্ম তাহা হইলে নানাবিকারবিশিষ্ট, নানাধর্ম্মবিশিষ্ট হইয়া উঠিলেন। শঙ্কর বলিয়াছেন যে, যদি ইহাই মনে কর তবে ঈদৃশ জগৎ অসত্য, মিথ্যা। ব্রহ্ম আপন 'স্বরূপকে' হারাইয়া জগৎ রূপে পরিণত হন নাই। জগৎও তাঁহা হইতে 'স্বতন্ত্র' কোন বস্তু নহে। কিন্তু অবিদ্যাচ্ছন্ন লোক এইরূপেই জগৎকে মনে করে। এ ভাবে জগৎ—অসত্য, মিথ্যা, অলীক।

---

* শঙ্কর এই অভিপ্রায়েই বলিয়াছেন যে 'এক ব্রহ্ম-বিজ্ঞানকে জানিলেই, সেই বিজ্ঞান হইতে অভিব্যক্ত সকল-বিজ্ঞানকেই বুঝিতে পারা যায়'। কেন না, সেই বিজ্ঞানটীই জগতের সর্ব্বপ্রকার বিজ্ঞানের মধ্য দিয়া আপনাকে অভিব্যক্ত করিতেছে। "ন চ প্রাণভেদানাং প্রভেববতঃ প্রাণাদন্যত্বং।……অতশ্চ কৃৎস্নস্য জগতঃ ব্রহ্মকার্য্যত্বাৎ তদনন্যত্বাচ্চ, সিদ্ধৈষা শ্রৌতী প্রতিজ্ঞা—যেনাশ্রুতংশ্রুতং ভবতি……অবিজ্ঞাতং বিজ্ঞাতং'—ব্র° ২।১।২০

"সামান্যে তদ্বিশেষাঃ উপ্তাঃ"। "সামান্যগ্রহণেনৈব তদ্বিশেষাঃ গৃহীতা ভবন্তি"। "কার্য্যং হি কারণস্য অনুবর্ত্তি ভবতি, সামান্যে লব্ধসত্তাকানামেব কর্ম্মণ। স্পষ্টীকরণং"—ইত্যাদি দ্রষ্টব্য। "পরমেশ্বর এব তেন তেন কার্য্যাত্মনা অবতিষ্ঠমানোঽভিধ্যায়ন্ তং তং বিকারং সৃজতি"। বে° ভা° ২।৩।১৩

(খ) এই উপলক্ষে পাঠকবর্গকে আর একটী কথা বলা আবশ্যক। পাশ্চাত্য দার্শনিক Herbert Spencer সিদ্ধান্ত করিয়াছেন যে, যিনি এই নাম-রূপাদি বিকারবর্গের কারণ, যিনি এই জগতের কারণ,—তিনি অজ্ঞাত ও অজ্ঞেয় বস্তু। এই বিকার-গুলিই কেবল আমাদের জ্ঞেয়। আমরা বিকার গুলিকেই জানিতে পারি, জগৎকেই জানিতে পারি, কিন্তু যাঁহা হইতে এ জগৎ উৎপন্ন হইয়াছে, তিনি আমাদের সম্পুর্ণ অজ্ঞাত [*]। জীব সম্বন্ধেও অবিকল এই কথা। আমরা জীব হইতে অভিব্যক্ত বিজ্ঞানগুলি ও ক্রিয়া-গুলিকেই[†] কেবল জানিতে পারি ; কিন্তু যাহা হইতে ইহারা উৎপন্ন হইতেছে, সেই জীব আমাদের সম্পূর্ণ অজ্ঞাত ও অজ্ঞেয় বস্তু।

এইরূপে Herbert Spencer জগৎ-কারণ ব্রহ্ম-সত্তাকে অজ্ঞাত ও অজ্ঞেয় বলিয়া উড়াইয়া দিয়া ; কেবল এই বিকারগুলিকেই—এই জগৎকেই একটা স্বতন্ত্র, স্বাধীন, বস্তু বলিয়া ধরিয়া লইয়াছেন। জীবকেও অজ্ঞাত ও অজ্ঞেয় বস্তু বলিয়া উড়াইয়া দিয়া ; কেবল বিজ্ঞান ও ক্রিয়া-গুলিকেই জীব হইতে স্বতন্ত্র করিয়া লওয়া হইয়াছে। তিনি, জগৎকে ব্রহ্ম-বস্তু হইতে একেবারে ছাঁটিয়া লইয়া, স্বতন্ত্র করিয়া লইয়া, ভিন্ন করিয়া লইয়া,—ইহাকেই জ্ঞেয় বলিয়া নির্দ্দেশ করিয়াছেন। আবার, জীব হইতে জীবের বিজ্ঞান ও ক্রিয়াগুলিকে একেবারে ছাটিয়া লইয়া, স্বতন্ত্র করিয়া লইয়া, ভিন্ন করিয়া লইয়া—এই গুলিকেই জ্ঞেয় বলিয়া নির্দ্দেশ করিয়াছেন [‡]।

---

[*] The Reality underlying appearances is totally and for ever inconceivable by us.“ *Its nature is not simply unknown* but proved by analysis of the *forms* of our intelligence to be unknowable.“

[†] The Power manifested throughout the universe is the same Power which in ourselves wells up under the form of conciousness. “দার্শনিক Kant ও এই কারণ-সত্তাকে ‘অজ্ঞাত’ বলিয়াছেন। “The presentations of the external sense can contain only the relation of an object to the subject, but not the internal nature of the object as a thing-in itself.”

[‡] It is only the bungling reflection of the philosopher that substantiates the two aspects as two separate facts—the qualities or phenomena as known or knowable, and the thing-in-itself, by definition unknown and unknowable.”—

—P. Pattison

আমরা অভিব্যক্ত বিকারগুলিকেই জানিতে পারি, কিন্তু বিকার-গুলির অন্তরালবর্ত্তী সত্তাটী সম্পূর্ণ অজ্ঞেয় ও অজ্ঞাত থাকিয়া যায়। ইহার অর্থই এই যে, বিকার-গুলিকে একেবারে স্বতন্ত্র করিয়া লওয়া হইল, এবং বিকার-গুলির অন্তরালবর্ত্তী ব্রহ্ম বা জীবকে অজ্ঞেয় বলিয়া উড়াইয়া দেওয়া হইল*। অথবা এরূপও অর্থ করা যায় যে, কারণ-সত্তা বা ব্রহ্ম-সত্তা একেবারে সম্পূর্ণ-রূপে, নিঃশেষে, Exhaustively,—এই জগৎ-রূপে বিকাশিত হইয়াছেন। সুতরাং, এই জগৎকে তাঁহা হইতে স্বতন্ত্র করিয়া লইয়া, জগৎকেই একটা স্বতন্ত্র স্বাধীন বস্তু মনে করা হইল। অর্থাৎ ব্রহ্মই এই জগৎ-রূপে একটা স্বতন্ত্র, ভিন্ন, অন্য বস্তু হইয়া পড়িলেন। জীব-সম্বন্ধেও, এই কথাই দাঁড়াইল। কিন্তু এই প্রকারে, নামরূপাদি বিকার-বর্গকে, জগৎকে,—ব্রহ্ম হইতে স্বতন্ত্র মনে করাকে—শঙ্করাচার্য্য 'অন্যত্ব-বোধ' শব্দে নির্দ্দেশ করিয়াছেন।† জীবের বিজ্ঞান ও ক্রিয়াগুলিকে, জীবের স্বরূপ হইতে স্বতন্ত্র করিয়া লওয়াকে, অন্য বস্তু বলিয়া বোধ করাকে—শঙ্করাচার্য্য 'অন্যত্ব-বোধ' শব্দে নির্দ্দেশ করিয়াছেন। অবিদ্যার প্রভাবেই লোকে, বিকার-বর্গকে 'স্বতন্ত্র,' স্বাধীন, অন্য বস্তু বলিয়াই মনে করিয়া থাকে। বিকার-বর্গের অন্তরালবর্ত্তী কারণ-সত্তাটীকে হয়,—"অজ্ঞাত' বলিয়া উড়াইয়া দেয়;—কিংবা সেই কারণ-সত্তাটীকেই বিকার-রূপে পরিণত হইয়া পড়িয়াছে বলিয়া মনে করে। এই 'অবিদ্যা'-নাশের জন্য, এই 'অন্যত্ব-বোধের' বিনাশের জন্য, শঙ্করাচার্য্য পুনঃ পুনঃ উপদেশ দিয়াছেন।

---

* "* * * But this something, absolutely and in itself—i. e. considered apart from its phenomena —is to us Zero."—Ibid

ব্রহ্মকে জগৎ হইতে একেবারে স্বতন্ত্র করিয়া দিলে, এই জগৎটাই একটা স্বতন্ত্র নিত্য বস্তু হইয়া উঠে ইহাও পাঠক দেখিবেন।

† যদন্য-গ্রহণং জাগ্রৎ স্বপ্নয়োঃ...তদবিদ্যাকৃতং"—তৈ' ভা'। "অন্যত্বদর্শনাপবাদাশ্চ বিদ্যাবিষয়ে সহস্রশঃ শ্রূয়ন্তে"। "নিত্যাহি আত্মভাবঃ সর্ব্বস্য 'অতদ্বিষয় ইব প্রত্যবভাসতে। তস্মাৎ অতদ্বিষয়াভাস নিবৃত্তিব্যতিরেকেণ ন তস্মিন্নাত্মভাবো বিধীয়তে। 'অন্যাত্মভাব-নিবৃত্তৌ' আত্মভাবঃ স্বাভাবিকঃ...... ভবতি"—বৃ' ভা', ৪।৪।২০

কার্য্যবর্গকে উহাদের কারণ হইতে কি ছাটিয়া লওয়া যায়? জগৎকে কি ব্রহ্ম হইতে ছাটিয়া লওয়া, স্বতন্ত্র করিয়া লওয়া যায়?*

জীবকেই বা উহার বিজ্ঞান ও ক্রিয়াগুলি হইতে স্বতন্ত্র করিয়া লইবে কিরূপে? শঙ্কর বলিয়াছেন যে, বাহ্য বিষয়বর্গই ত আপনাকে প্রকাশ করিবার জন্য জীবে ইন্দ্রিয়, মন, বুদ্ধি প্রভৃতিরূপে পরিণত হইয়াছে †। বাহ্য-বিষয় বা জগৎ না থাকিলে জীব আপনার দেহ, ইন্দ্রিয়, মন, বুদ্ধিকে গড়িয়া লইবে কোথা হইতে? সুতরাং জীবকে, জগৎ হইতে, বাহ্য বিষয় হইতে ছাটিয়া—স্বতন্ত্র করিয়া—লইবে কি প্রকারে? বিষয় না থাকিলে, বিষয়ী থাকিবে কিরূপে? জগৎ না থাকিলে জীব কিসের মধ্যে ব্রহ্মের অনন্ত জ্ঞান, অনন্ত শক্তি সৌন্দর্য্যের পরিচয় পাইবে? ‡

সুতরাং শঙ্করের সিদ্ধান্ত এই যে—এই নামরূপাদি বিকার বা জগতের অন্তরালে ব্রহ্ম আপন একত্বকে বা স্বরূপকে হারান না; তিনি অজ্ঞেয়ও হন না। জীবও বিষয়-বিজ্ঞান ও ক্রিয়াগুলির অন্তরালে আপন একত্বকে বা স্বরূপকে হারায় না; অজ্ঞেয়ও হয় না। ব্রহ্ম সর্ব্বদাই এই নাম-রূপাদি বিকারের বা জগতের অন্তরালে অবস্থিত রহিয়াছেন §। জীবও সর্ব্বদা, বিষয়-বিজ্ঞান ও বিষয়দ্বারা উদ্রিক্ত ক্রিয়াগুলির অন্তরালে অবস্থান করে।

---

* দ্বিতীয় অধ্যায়ের, ৭৬ পৃষ্ঠায়, এ সম্বন্ধে শঙ্কর ভাষ্য হইতে প্রচুর স্থল উদ্ধৃত করিয়া দেখান হইয়াছে। পাঠক সেই স্থলগুলি দেখিবেন। "বস্তু চ যস্মাদাত্মলাভো ভবতি, স তেন অবিভক্তো দৃষ্টঃ, যথা ঘটাদীনাং মৃদা"। সামান্যাননুবিদ্ধানাং বিশেষাণাং অদর্শনাৎ—ইত্যাদি দেখুন।

† "বিষয়সমানজাতীয়ং করণং মন্যতে শ্রুতি, ন´ জাত্যন্তরং। বিষয়স্যৈব স্বাত্মগ্রাহকত্বেন সংস্থানান্তরং করণং নাম……এবং সর্ব্ববিষয়বিশেষাণামেব স্বাত্মবিশেষপ্রকাশকত্বেন সংস্থানান্তরাণি করণানি প্রদীপবৎ—বৃ° ভা°, ২।৪।১১

‡ "যদি হি নাম-রূপে ন ব্যাক্রিয়েতে, তদা অস্যাত্মনো নিরুপাধিকংরূপং প্রজ্ঞানঘনাখ্যং ন প্রতিখ্যায়েত। যদা পুনঃ কার্য্য-করণাত্মনা নামরূপে ব্যাকৃতে ভবতঃ, তদাঅস্য রূপং প্রতিখ্যায়েত"—বৃ° ভা°, ২।৫।১৮

"মনুষ্যাদিস্তম্বপর্য্যন্তেষু জ্ঞানৈশ্বর্য্যাদি তিবন্ধঃ পরেণ পরেণ ভূয়ান্ ভবন্ দৃশ্যতে, তথা মনুষ্যাদিষু হিরণ্যগর্ভ পর্য্যন্তেষু জ্ঞানৈশ্বর্য্যাদ্যভিব্যক্তিরপি পরেণ পরেণ ভূয়সী ভবতি"।—ব্র° সূ°, ১।৩,৩০ বেদান্তভাষ্যে জগৎকে "ব্রহ্ম-লিঙ্গ" বলা হইয়াছে। লিঙ্গ—পরিচায়কচিহ্ন।

§ এই জন্যই বেদান্তে ব্রহ্মকে জগতের 'নিমিত্ত-কারণ' এবং 'উপাদান কারণ'—উভয়ই বলা হইয়াছে। কেবলমাত্র নিমিত্ত-কারণ বলিলে, ব্রহ্মকে জগৎ হইতে একেবারে স্বতন্ত্র করিয়া দেওয়া হইত, এবং তাহা হইলে, জগৎ ও জীব—উভয়ই স্বতন্ত্র, স্বাধীন বস্তু হইয়া পড়িত। এ কথাটাও পাঠক লক্ষ্য করিবেন।

সুতরাং এই বিকার-বর্গকে অন্তরালবর্ত্তী কারণ হইতে ছাটিয়া লইবে কিরূপে ? স্বতন্ত্র বা অন্য বলিয়া পৃথক করিয়া লইবে কিরূপে ?

এই জন্যই শঙ্কর,—কার্য্যবর্গকে কারণ হইতে 'অনন্য' বলিয়াছেন[*]। নামরূপাদি বিকার-বর্গ—অনন্য। ইহারা ব্রহ্মের অনন্ত স্বরূপের পরিচায়ক বা দ্বার। বিষয়-বিজ্ঞান গুলিও জীবের স্বরূপের পরিচায়ক বা দ্বার। ইহারা ব্রহ্ম-স্বরূপের পরিচয় প্রদান করে, সেই স্বরূপকে জানাইয়া দেয়। সুতরাং অন্তরালবর্ত্তী স্বরূপকে অজ্ঞেয় ও অজ্ঞাত বলিবে কি প্রকারে ?[†]

পাঠক এই আলোচনা হইতেও বুঝিতে পারিতেছেন যে, শঙ্করাচার্য্য বিকার-গুলিকে বা জগৎকে স্বাধীন ও স্বতন্ত্র বস্তুরূপে ধরিয়া লইতেই নিষেধ করিয়াছেন। কিন্তু উহাদিগকে অলীক মিথ্যা বস্তু বলিয়া উড়াইয়া দেন নাই।

(৯) বেদান্ত-ভাষ্যে শঙ্করাচার্য্য, 'অসত্য' ও 'অলীক'—এই দুই শব্দের ব্যবহারে পার্থক্য রাখিয়াছেন। শশ-বিষাণ, বন্ধ্যা-পুত্র, আকাশ-কুসুম এই

---

[*] "তদনন্যত্বং আরম্ভনশব্দাদিভ্যঃ"—প্রভৃতি বেদান্ত সূত্রের ভাষ্য দ্রষ্টব্য। "তস্মাৎ কারণাৎ পরমার্থতঃ অনন্যত্বং—ব্যতিরেকেন অভাবঃ—কার্য্যস্ত অবগম্যতে" ইত্যাদি। কার্য্যবর্গকে, কারণ হইতে কোন 'ব্যতিরিক্ত' বস্তু বলিয়া, স্বতন্ত্র বস্তু বলিয়া, পৃথক্ করিয়া লওয়া যায় না। কেননা "নহি বিশেষ-দর্শনমাত্রেন বস্ত্বন্যত্বং ভবতি, স এবেতি প্রত্যভিজ্ঞানাৎ"। বিশেষাকার ধারণ করিলেও কারণটী ঠিক্‌ই থাকে, কোন ভিন্ন বস্তু হইয়া উঠে না। এই জন্য শঙ্কর বলিয়াছেন—"মূলকারণমেব আ-অন্ত্যাৎকার্য্যাৎ তেন তেন কার্য্যাকারেণ নটবৎ সর্ব্বব্যবহারাস্পদত্বং প্রতিপদ্যতে"।

i. e. The series of successive states which make up the history of a thing are the expression of the thing's nature." "They are the selfevident expression of the identity which is their underlying principle"

[†] প্রত্যয়ৈঃ (বিষয়-বিজ্ঞানৈঃ) এব, প্রত্যয়েষু অবিশিষ্টতয়া লক্ষ্যতে, নান্যৎদ্বারমস্তি আত্মনো বিজ্ঞানায়"—কঠ' ভা', ২।৪। "দর্শন-শ্রবনমনন-বিজ্ঞানাদ্যুপাধিধর্ম্মৈরাবির্ভূতং সৎ লক্ষ্যতে হৃদি সর্ব্ব-প্রাণিনাং"—প্র' ভা', ২।২।১

"সর্ব্বপ্রাণিকরণোপাধিভিঃ ক্ষেত্রজ্ঞাস্তিত্বং বিভাব্যতে।……পাণিপাদাদয়ঃ জ্ঞেয়শক্তিসদ্ভাবনিমিত্ত-স্বকার্য্যা ইতি জ্ঞেয়-সদ্ভাবে 'লিঙ্গানি' জ্ঞেয়স্য"—গী' ভা', ১৩।১৩ "লৌকিক্যা দৃষ্টেঃ কর্ম্মভূতায়াঃ দ্রষ্টারং স্বকীয়য়া নিত্যয়া দৃষ্ট্যা ব্যাপ্তারং ন পশ্যেঃ?"—বৃ', ভা', ৩।৪।২

এই বিকার-গুলিই (Phenomena) তাঁহার স্বরূপের পরিচয় দেয়, নতুবা তাঁহাকে জানিবার আর অন্য উপায় নাই। "বিকার-দ্বারেণাপি ব্রহ্মণো নির্দ্দেশঃ কর্ত্তব্যঃ" (বৃ' ভা')। "তানি নামাদীনি প্রাণান্তানি ক্রমেণ নির্দ্দিশ্য, 'তদ্দ্বারেণাপি' ভূমাখ্যং নিরতিশয়ংতত্ত্বং নির্দ্দেক্ষ্যামি"—ইত্যাদি, ছা' ভা' ৭।১।১।

(ii) এই যুক্তি দেখাইয়া, শঙ্কর বলিতেছেন যে, রজ্জু-সর্প, মরু-মরীচি-কাদি বস্তুগুলিকেও—শশ-বিষাণাদি বস্তুগুলি অপেক্ষা অধিকতর 'সত্য' বলা যাইতে পারে। কেন না, রজ্জু-সর্প, মরু-মরীচিকা প্রভৃতি বস্তু সম্বন্ধে ইহা বিলক্ষণ বুঝিতে পারা যায় যে, উৎপন্ন হইবার পূর্ব্বে ইহারা একটা বস্তুর সত্তা হইতে উৎপন্ন হইয়া থাকে; উৎপন্ন হওয়ার পরও ইহারা সেই সত্তাকে অবলম্বন করিয়াই অবস্থান করে। আবার, পরেও ইহারা সেই সত্তাতেই বিলীন হইয়া যাইবে। সর্প কি রজ্জু হইতে স্বতন্ত্র হইয়া থাকিতে পারে? মৃগতৃষ্ণা কি মরুভূমিকে ছাড়িয়া থাকে? সুতরাং এ সকল বস্তু, বন্ধ্যা-পুত্রাদি বস্তু অপেক্ষা অধিকতর 'সত্য'*।

(iii) শঙ্করাচার্য্য এই কথা বলিয়া দিয়া, জগতের নাম-রূপাদি বিকার গুলিকে এই সকল রজ্জু-সর্প ও মরু-মরীচিকা প্রভৃতি বস্তু অপেক্ষাও, অধিকতর 'সত্য' বলিয়া স্পষ্ট নির্দ্দেশ করিয়াছেন। বলিতেছেন যে—মরুভূমিতে যে জল দৃষ্ট হয়, উহা অপেক্ষা, যে জল আমরা সর্ব্বদা ব্যবহার করিয়া থাকি, তাহা অধিক 'সত্য'। মরুর জল সেরূপ সত্য নহে+।

এই সকল কথা বলিয়া শঙ্কর, ব্রহ্মবস্তুকে 'পারমার্থিক সত্য' বলিয়া নির্দ্দেশ করিয়াছেন, এবং এই পারমার্থিকভাবে সত্য ব্রহ্মবস্তুর সহিত তুলনাতেই কেবল জগতের বিকার-গুলিকে 'অসত্য' শব্দে নির্দ্দেশ করা যাইতে পারে,—ইহাই বলিয়াছেন। পাঠক জগৎ যে শঙ্কর-মতে অলীক, অসত্য বস্তু নহে, তাহা এই সকল তুলনা দ্বারা অকাট্যরূপে প্রমাণিত হয় কিনা, বিচার করিবেন। ব্রহ্ম যেমন নিয়ত একরূপ, কূটস্থ-সত্য; জগৎ কেবল সেইভাবে 'সত্য' নহে। ব্রহ্মবস্তু—পারমার্থিকরূপে 'সত্য'। বিকারগুলি আমাদের প্রয়োজন সিদ্ধ করে, সুতরাং ইহারাও 'সত্য'। কিন্তু ব্রহ্ম—পারমার্থিক

---

* "নহি নিরাত্মকং কিঞ্চিৎ ব্যবহারায় অবকল্পতে"—এই নির্দ্দেশ করিয়া, শঙ্কর বলিতেছেন—

(*a*) "রজ্জ্বাত্মনা অববোধাৎ প্রাক্ সর্পঃ সন্নেব ভবতি"।

(*b*) "ন হি মৃগতৃষ্ণিকাদয়োপি নিরাস্পদা ভবন্তি"।

(*c*) "ন হি সর্প-রজত-পুরুষ-মৃগতৃষ্ণিকাদিবিকল্পাঃ রজ্জু-শুক্তি-স্থাণূষরাদি ব্যতিরেকেণ অবস্তাস্পদাঃ শক্যাঃ কল্পয়িতুঃ"—মাং-কারিকা-ভাষ্য, আগমপ্রকরণ।

(*d*) "রজ্জুরেবেতি নিশ্চয়ে সর্পবিকল্পনিবৃত্তৌ রজ্জুরেবেতি"—বৈতথ্য প্রকরণ।

+ "মৃগতৃষ্ণিকাদ্যপেক্ষয়া পরমার্থোদকাদি 'সত্যং'"—তৈঃ ভাষ্য।

সকল বস্তুকে তিনি 'অলীক' বলিয়া নির্দ্দেশ করিয়াছেন, এবং এই অলীক অর্থেই ইহাদিগকে অসত্য ও মিথ্যা পদার্থ বলিয়া নির্দ্দেশ করা হইয়াছে। এতদ্ব্যতীত, বেদান্ত-ভাষ্যে শঙ্করাচার্য্য,—রজ্জু-সর্প, মরু-মরীচিকা, গগন-মালিন্য প্রভৃতি কতকগুলি বস্তুর উল্লেখ করিয়াছেন। এই সকল বস্তুকেও 'অসত্য' বলা হইয়াছে। এতদ্ব্যতীত, এই জগতের নাম-রূপাদি বিকার-গুলির উল্লেখ আছে।

শঙ্কর আমাদিগকে স্পষ্ট বলিয়া দিয়াছেন যে, জগতের নাম-রূপাদি বিকার-গুলিকে,—শশ-বিষাণ, আকাশ-কুসুম, বন্ধ্যা-পুত্রাদি বস্তুর মত 'অলীক' বস্তু কদাপি বলা যাইতে পারে না। কেন বলা যাইতে পারে না? শঙ্কর যুক্তি দিতেছেন—

(i) উৎপত্তির পূর্ব্বে, এই জগৎ একটা কারণ-বস্তু হইতে উৎপন্ন হইয়াছিল। সুতরাং এই জগৎকে 'অলীক' বা 'অসত্য' বস্তু বলিতে পারি না। কিন্তু, শশ-বিষাণ, বন্ধ্যা-পুত্রাদি বস্তু কোন কারণ-বিশেষ হইতে উৎপন্ন হয় না; তজ্জন্যই এ সকলকে 'অলীক' বা 'অসত্য' বস্তু বলিতে পারা যায়*। কেবল ইহাই নহে। উৎপন্ন হইবার পরেও, এই জগৎ উহার কারণ ব্রহ্ম-বস্তুকে আশ্রয় করিয়াই রহিয়াছে। ভবিষ্যতেও, জগৎ সেই কারণেই বিলীন হইয়া যাইবে†। কিন্তু বন্ধ্যা-পুত্র, শশ-বিষাণাদি বস্তুগুলি কেবল যে কোন কারণ-বিশেষ হইতে উৎপন্ন হয় নাই তাহা নহে; বর্ত্তমানেও উহারা কোন কারণকে আশ্রয় করিয়া থাকে না; ভবিষ্যতেও, উহারা কোন কারণে বিলীন হইবে না‡। তবেই জগৎ এবং বন্ধ্যা-পুত্রাদি একরকমের বস্তু নহে। সুতরাং জগৎটা শশ-বিষাণ, বন্ধ্যা-পুত্রাদির ন্যায় অলীক হইতেছে না।

---

* "অসতঃ শশ-বিষাণাদেঃ সমুৎপত্ত্যদর্শনাৎ, অস্তি জগতো মূলং।……যস্মাচ্চ জায়তে কিঞ্চিৎ, তদস্তীতি দৃষ্টং লোকে……সন্বোক্ত্যৈব সত্যত্বমুচ্যতে"—তৈ° ভাষ্য। "কার্য্যেণ হি লিঙ্গেন কারণ-ব্রহ্ম-জ্ঞানার্থত্বং সৃষ্টিশ্রুতীনাং। তচ্চেদসম্ভবেৎ, ন তস্য কারণেন সম্বন্ধ-ধীরিতি অসদেব কারণমপি স্যাৎ"।—আনন্দগিরি।

† "সন্মূলাঃ সৌম্য ইমাঃ প্রজাঃ……সদায়তনাঃ……সৎপ্রতিষ্ঠাঃ।……বিকারাণাং সদেব লয়ঃ সমাপ্তিঃ অবসানং"—ছান্দো° ভাষ্য। "জন্মাদ্যস্য যতঃ" (ব্রহ্মসূত্র)।

‡ বন্ধ্যাপুত্রো ন তত্ত্বেন, মায়য়া বাপি জায়তে"—মাণ্ডু° কারিকা ভাষ্য। "ন হি বন্ধ্যাপুত্রো রাজা বভুব, প্রাক্ পূর্ণবর্ম্মণোঽভিষেকাৎ—ইতি মর্য্যাদাকরণেন, বন্ধ্যাপুত্রো রাজা বভূব, ভবতি, ভবিষ্যতীতি বা"—ব্রহ্মসূত্র. ২।১।১৮

(ii) এই যুক্তি দেখাইয়া, শঙ্কর বলিতেছেন যে, রজ্জু-সর্প, মরু-মরীচিকাদি বস্তুগুলিকেও—শশ-বিষাণাদি বস্তুগুলি অপেক্ষা অধিকতর 'সত্য' বলা যাইতে পারে। কেন না, রজ্জু-সর্প, মরু-মরীচিকা প্রভৃতি বস্তু সম্বন্ধে ইহা বিলক্ষণ বুঝিতে পারা যায় যে, উৎপন্ন হইবার পূর্ব্বে ইহারা একটা বস্তুর সত্তা হইতে উৎপন্ন হইয়া থাকে; উৎপন্ন হওয়ার পরও ইহারা সেই সত্তাকে অবলম্বন করিয়াই অবস্থান করে। আবার, পরেও ইহারা সেই সত্তাতেই বিলীন হইয়া যাইবে। সর্প কি রজ্জু হইতে স্বতন্ত্র হইয়া থাকিতে পারে? মৃগতৃষ্ণা কি মরুভূমিকে ছাড়িয়া থাকে? সুতরাং এ সকল বস্তু, বন্ধ্যা-পুত্রাদি বস্তু অপেক্ষা অধিকতর 'সত্য'*।

(iii) শঙ্করাচার্য্য এই কথা বলিয়া দিয়া, জগতের নাম-রূপাদি বিকার গুলিকে এই সকল রজ্জু-সর্প ও মরু-মরীচিকা প্রভৃতি বস্তু অপেক্ষাও, অধিকতর 'সত্য' বলিয়া স্পষ্ট নির্দ্দেশ করিয়াছেন। বলিতেছেন যে—মরুভূমিতে যে জল দৃষ্ট হয়, উহা অপেক্ষা, যে জল আমরা সর্ব্বদা ব্যবহার করিয়া থাকি, তাহা অধিক 'সত্য'। মরুর জল সেরূপ সত্য নহে†।

এই সকল কথা বলিয়া শঙ্কর, ব্রহ্মবস্তুকে 'পারমার্থিক সত্য' বলিয়া নির্দ্দেশ করিয়াছেন, এবং এই পারমার্থিকভাবে সত্য ব্রহ্মবস্তুর সহিত তুলনাতেই কেবল জগতের বিকার-গুলিকে 'অসত্য' শব্দে নির্দ্দেশ করা যাইতে পারে,—ইহাই বলিয়াছেন। পাঠক জগৎ যে শঙ্কর-মতে অলীক, অসত্য বস্তু নহে, তাহা এই সকল তুলনা দ্বারা অকাট্যরূপে প্রমাণিত হয় কিনা, বিচার করিবেন। ব্রহ্ম যেমন নিয়ত একরূপ, কূটস্থ-সত্য; জগৎ কেবল সেইভাবে 'সত্য' নহে। ব্রহ্মবস্তু—পারমার্থিকরূপে 'সত্য'। বিকারগুলি আমাদের প্রয়োজন সিদ্ধ করে, সুতরাং ইহারাও 'সত্য'। কিন্তু ব্রহ্ম—পারমার্থিক

---

* "নহি নিরাত্মকং কিঞ্চিৎ ব্যবহারায় অবকল্পতে"—এই নির্দ্দেশ করিয়া, শঙ্কর বলিতেছেন—

(a) "রজ্জ্বাত্মনা অববোধাৎ প্রাক্ সর্পঃ সন্নেব ভবতি"।

(b) "ন হি মৃগতৃষ্ণিকাদয়োপি নিরাস্পদা ভবন্তি"।

(c) "ন হি সর্প-রজত-পুরুষ-মৃগতৃষ্ণিকাদিবিকল্পাঃ রজ্জু-শুক্তি-স্থাণূষরাদি ব্যতিরেকেণ অবস্বাস্পদাঃ শক্যাঃ কল্পয়িতুং" -মা -কারিকা-ভাষ্য, আগমপ্রকরণ।

(d) "রজ্জুরেবেতি নিশ্চয়ে সর্পবিকল্পনিবৃত্তৌ রজ্জুরেবেতি"—বৈতথ্য প্রকরণ।

† "মৃগতৃষ্ণিকাদ্যপেক্ষয়া পরমার্থোদকাদি 'সত্যং'"—তৈ° ভাষ্য।

ভাবে 'সত্য'; তাঁহারই তুলনায় কেবল, বিকার-গুলিকে 'অসত্য' শব্দে নির্দ্দেশ করা যায়[*]।

এই প্রকারে শঙ্কর, জগতের নামরূপাদি বিকার-গুলিকে,—দুই জাতীয় বস্তু হইতে[†] পৃথক্ করিয়া দেখাইয়াছেন। সুতরাং জগৎকে আমরা অলীক বলিয়া উড়াইয়া দিতে পারি কৈ? শশ-বিষাণাদি ত দূরের কথা; রজ্জুসর্পাদি বস্তু হইতেও, জগতের নাম-রূপাদি বিকার-গুলি 'সত্য'। ইহাইত শঙ্করের সিদ্ধান্ত। লোকে, এই সকল কথা অনুধাবন করিয়া দেখে না।

(১০) আমরা যে বিবরণ দিয়া আসিলাম, তাহা হইতে বুঝিতে পারা যাইতেছে যে, শঙ্কর-মতে, "পরিণাম-বাদকে" রাখিয়াই, "বিবর্ত্তবাদের" প্রাধান্য কীর্ত্তিত হইয়াছে। সকল জীবই স্বভাবতঃ অবিদ্যাচ্ছন্ন। সুতরাং স্বাভাবিক দৃষ্টিতে উহারা, এই জগৎকেই ব্রহ্ম বলিয়া মনে করে; ব্রহ্ম যে জগৎ হইতে স্বতন্ত্র, ব্রহ্ম যে এই নাম-রূপাত্মক বিবিধ পরিবর্ত্তনের মধ্যেও, আপন স্বাতন্ত্র্য ও একত্ব অব্যাহত রাখেন;—এই তত্ত্বটা উহাদের দৃষ্টিতে স্থান পায় না[‡]। সুতরাং উহাদের ভেদ-দৃষ্টি বড় প্রবল। এই জন্যই সাধারণ, অবিদ্যাচ্ছন্ন লোক, নাম-রূপাত্মক বিবিধ বস্তুকেই দেখে। কিন্তু, যাঁহাদের বোধ পরিপক্বতা লাভ করে, তাঁহারা জগতের কোন বিকারকেই ব্রহ্ম হইতে স্বতন্ত্র বস্তু বলিয়া অনুভব করিতে পারেন না। এই জন্যই শঙ্কর বলিয়াছেন যে—

(i) স্বাভাবিক অবিদ্যাচ্ছন্ন লোকের চক্ষে নাম-রূপাদি বিবিধ বস্তুই প্রতিভাত হইতে থাকে। কিন্তু যাঁহাদের পারমার্থিক জ্ঞান উৎপন্ন

---

[*] "ব্রহ্ম……পরমার্থতঃ 'সত্যং'……অনৃতং বিকার-জাতং। নন্বু বিকারোপি সত্যমেব? "নাম-রূপাদি সত্যং," "প্রাণাদয়ঃ সত্যং, তেষামেষ সত্যং" ইতি।……সত্য মুক্তং সত্যত্বং বিকারাণাং। তত্ত্ব ন পরমার্থাপেক্ষয়া। কিং তর্হি? ইন্দ্রিয়বিষয়াপেক্ষয়া উক্তং। সত্যস্ত পরমার্থস্ত উপলব্ধি-দ্বারং ভবতি" —ছাং ভাষ্য, ৭।১৭।১।

[†] অর্থাৎ শশ-বিষাণাদি বস্তু হইতে এবং রজ্জু-সর্পাদি বস্তু হইতে।

[‡] ব্রহ্ম, যখন এই নামরূপাদি বিকার গুলি হইতে 'স্বতন্ত্র'; তখন, এই বিকারগুলি থাকাতেও, ব্রহ্মের 'অদ্বৈততার'—'একত্বের' হানি হইবে কিরূপে? তিনি যখন স্বতন্ত্র, তখন তিনি যে এক, সেই 'একই' থাকিতেছেন। তিনি ত এই বিকারগুলির দ্বারা 'অনেক' হইয়া উঠিতেছেন না।

হইয়াছে, তাঁহারা কোন বস্তুকেই ব্রহ্ম হইতে 'স্বতন্ত্র' বলিয়া বোধ করেন না[*]।"

(ii) "সূত্রকার 'পরিণাম'কে প্রত্যাখ্যান করেন নাই, উড়াইয়া দেন নাই। পরিণামকে রাখিয়াই, ব্রহ্মের একত্ব প্রতিপাদিত করিয়াছেন[†]।

(iii) "এই জন্যই স্বাভাবিক দৃষ্টি ও পারমার্থিক দৃষ্টি এই উভয়ের মধ্যে কোন বিরোধ থাকিতেছে না"[‡]। পাঠক দেখুন, এ সকল কথাতে জগৎ অলীক হইয়া উড়িয়া যাইতেছে না।

(১১) জগতের অসত্যতা সম্বন্ধে, আর একটী কথা বলিয়া, আমরা আমাদের বক্তব্য শেষ করিব। আমরা পূর্ব্বে দেখাইয়াছি যে, প্রাণশক্তি ব্রহ্ম হইতে স্পন্দনাকারে অভিব্যক্ত হইয়াছে। এই বিশ্বব্যাপ্ত প্রাণ-স্পন্দন হইতেই সকল জীব আপন আপন দেহেন্দ্রিয় গড়িয়াছে। সুতরাং, এই স্পন্দন—সকল বস্তু ও সকল জীবকে পরস্পর সম্বন্ধে লইয়া আসিয়া, উহাদের স্বরূপানুযায়ী বিবিধগুণ ও ধর্ম্মের অভিব্যক্তির কারণ হইয়া রহিয়াছে। এই সকল ধর্ম্মের অভিব্যক্তি না হইলে, কাহারই স্বরূপের 'একত্ব' পরিস্ফুট হইতে পারিত না, কেহই পূর্ণতা লাভ করিতে সমর্থ হইত না[§]। ব্রহ্ম—এই প্রাণ-স্পন্দনের মূলে থাকিয়া, উহাকে এই উদ্দেশ্যে প্রেরণ করিতেছেন। এই প্রাণ-স্পন্দন ব্রহ্ম হইতে 'স্বতন্ত্র' বস্তু হইবে কি প্রকারে? তাঁহার বাহিরে, তাঁহা ছাড়া বস্তু কোথায়?[¶]। প্রাণ তাঁহা হইতে কোন স্বতন্ত্র বস্তু

---

[*] নামরূপোপাধ্যস্তিত্বে, 'একমেবাদ্বিতীয়ং'—ইত্যাদি শ্রুতয়ো বিরুধ্যেরন্ ইতি চেৎ? ন।...কেন-চিদস্পৃষ্টস্বভাবমপি 'সৎ' যদা নাম-রূপকৃত-কার্য্য-করণোপাধিভ্যো বিবেকেন নাবধার্য্যতে, তদা নামরূপোপাধি-দৃষ্টিরেব ভবতি স্বাভাবিকী।...যদা তু পরমার্থদৃষ্ট্যা, পরমাত্মতত্ত্বাৎ—অন্যত্বেন নিরূপ্যমানে নামরূপে বস্ত্বন্তরে তত্ত্বতো ন স্তঃ, তদা...পরমার্থদর্শনগোচরত্বং প্রতিপদ্যতে" (বৃহ° ভাষ্য, ৩।৫।১)

[†] সূত্রকারোপি পরমার্থাভিপ্রায়েণ 'তদনন্যত্ব' মিত্যাহ।...অপ্রত্যাখ্যায়ৈব চ কার্য্যপ্রপঞ্চং পরিণাম-প্রক্রিয়াঞ্চ আশ্রয়তি" —ব্রহ্মসূত্র, ২।১।১৫

[‡] "তস্মাৎ জ্ঞানাজ্ঞানে অপেক্ষ্য. সর্ব্বঃ শাস্ত্রীয়ো লৌকিকশ্চ ব্যবহারঃ। অতো ন কাচন বিরোধাশঙ্কা —অতঃ বিরুদ্ধধর্ম্মসমবায়িত্বে পদার্থানাং ন কশ্চন বিরোধঃ—বৃ° ভা°।

[§] "তস্থাদিকারণাবস্থং ..অস্পষ্টং সৎ, তুরী-বেমাদি-কারকব্যাপারাভিব্যক্তং স্পষ্টং গৃহ্যতে" (ব্রহ্মসূত্র, ২।১।১৯)। আবার—"সাধনসামগ্র্যাত্তু চ তস্য (ক্ষীরাদিদ্রব্যস্য স্বরূপস্য) পূর্ণতা সম্পাদ্যতে" (২।১।২৪)।

[¶] "নহি আত্মব্যতিরেকেণ 'অন্যৎ' কিঞ্চিদস্তি"। ন চাস্তি তস্য উদ্গমনে স্বতোঽতিরিক্তং কারকান্তরং —কারকভেদাভাবেপি প্রবৃত্তিং দর্শয়তঃ" (বৃ° ভা°, ২।১।২০)।

হইতে পারে না বলিয়াই, ইহাকে ব্রহ্মেরই "আত্মভূত"[*] বলা হইয়াছে ইহা, ব্রহ্ম-স্বরূপেরই অভিব্যক্তি করিতেছে। সুতরাং জগৎকেও, ব্রহ্মেরই স্বরূপের বিকাশ বলিয়াই গ্রহণ করিতে হইবে†। কাজেই, জগৎকে ব্রহ্ম হইতে স্বতন্ত্র স্বাধীন বস্তু বলা অসম্ভব। স্বতন্ত্র বস্তু নহে বলিয়াই ব্রহ্মের অদ্বৈতত্বের কোনই হানি হইতে পারিতেছে না‡। পাঠক, একথাটাও লক্ষ্য করিবেন।

জগতের বিকারবর্গ, কার্য্যবর্গ—আমাদের নিকটে দেশ ও কালে বিভক্ত বলিয়া,—একটা অপরটার বাহিরে, একটা অপরটা হইতে অন্য—এইরূপেই প্রতীত হইয়া থাকে বটে; কিন্তু ব্রহ্ম হইতে দেশ ও কালে বিভক্ত কোন বস্তু বা বিকার থাকিতে পারে না§। কেন না, সকল বস্তু, সকল বিকার, তাঁহার স্বরূপেরই অন্তর্ভুক্ত এবং ইহাদিগকে তাঁহার স্বরূপই ধরিয়া রাখে। কেন না, তাঁহার স্বরূপই এই সকলের মধ্যে আপনাকে বিকাশিত করিতেছেন¶। সকল বিকারই তাঁহার স্বরূপের অংশ। অংশ—উহার অংশী হইতে স্বতন্ত্র বস্তু হইতে পারে না‖। তাই জগতের কোন বিকারকেই তাঁহার স্বরূপ হইতে স্বতন্ত্র মনে করা যায় না। এই জন্য, বিকারগুলিকে ব্রহ্মের "আত্মভূত" বলা হইয়াছে।

কারণের যেটা প্রকৃত 'স্বরূপ' সেটা,—উহা হইতে যে সকল বিকার পর পর-উৎপন্ন হয় সেই গুলির অন্তরালে উপস্থিত থাকিয়া, উহাদের

---

[*] "যংস্বরূপব্যতিরেকেণ অগ্রহণং যস্য, তস্য "তদাত্মত্বং" দৃষ্টং লোকে" (বৃহ ভাষ্য, ২।৪।৭)।

এইজন্য, ব্রহ্মের কামনা বা সঙ্কল্পকেও "কামাঃ ব্রহ্মণোঽনন্যাঃ"—'অনন্য', বলা হইয়াছে।

† বেদান্তদর্শনে বিকারবর্গকে এই উদ্দেশ্যেই পুনঃ পুন 'ব্রহ্ম-লিঙ্গ" বলা হইয়াছে। "যৎ—জগদাকার পরিণামিত্বাদি শ্রূয়তে, তৎ ব্রহ্মদর্শনোপায়ত্বেনৈব বিনিযুজ্যতে," ইত্যাদি (বেদান্তদর্শন)।

‡ 'স্বতন্ত্রনিষেধেন স্বতঃসত্তা-নিষেধাৎ ন অদ্বৈতশ্রুতিবিরোধঃ'। "ন তু ঐক্যাভিপ্রায়েণ"

§ "ন হি আত্মনোঽন্যৎ অনাত্মভূতং, তৎ-প্রবিভক্তদেশকালং, সূক্ষ্মং ব্যবহিতং বিপ্রকৃষ্টং ভূতং ভবিষ্যদ্বা বস্তু বিদ্যতে।"

"ব্যাকৃতে চ মূর্ত্তামূর্ত্তশব্দবাচ্যে তে, আত্মনাঽপ্রবিভক্তদেশকালে ইতি কৃত্বা—'আত্মা'তে অভবদিত্যুচ্যতে"- তৈ. ভাঃ ২।৬

¶ "বিশেষাঃ সামান্যে অন্তর্ভূতাঃ।" "তদ্ব্যতিরেকেণাভাবভূতা ভবন্তি" (বৃ ভা', ২।৪।১১)। সামান্যং হি বিশেষান্ আত্মস্বরূপ-প্রদানেন বিভর্ত্তি—ধারয়তি।"

‖ "অংশঃ হি অংশিনা একত্ব-প্রত্যয়ার্হোদৃষ্টঃ" -বৃ, ভা।

মধ্য দিয়াই, আপন স্বরূপকে ক্রমে ক্রমে অভিব্যক্ত করিতে থাকে। বিকার-গুলির মধ্যে সেই স্বরূপটী আপনাকে হারাইয়া ফেলে না। সুতরাং বিকার-গুলিই যে একটী অপরটীর কারণ, তাহাও হয় না। ব্রহ্মবস্তু, জগতের নাম-রূপাদি বিকার দ্বারাই, আপনাকে ক্রমে ক্রমে প্রকৃষ্ট হইতে প্রকৃষ্টতর-রূপে অভিব্যক্ত করিতেছেন[*]। আজও এই ক্রমাভিব্যক্তির শেষ হয় নাই, উহা এখনও চলিতেছে[†]।

তার্কিকেরা কিন্তু এভাবে কার্য্য-কারণের তত্ত্ব নির্দ্দেশ করেন না। তাঁহারা বর্ত্তমানে উৎপন্ন বিকারকে (ঘটকে), উহার কারণ বা পূর্ব্বাবস্থা হইতে (মৃৎ-পিণ্ড হইতে) একটা সম্পূর্ণ ভিন্ন 'বস্তু' বলিয়া মনে করেন। এবং বলেন যে, উৎপত্তির পূর্ব্বে ত এই বস্তুটা ছিল না; এটা বর্ত্তমানে উৎপন্ন হইল। উৎপন্নের পূর্ব্বে যাহা ছিল, সেটা ত একটা সম্পূর্ণ ভিন্ন বস্তু। ঘটের পূর্ব্বাবস্থা বা কারণ ত—মৃৎ-পিণ্ড। সেই মৃৎ-পিণ্ড হইতে ঘট ত একটা স্বতন্ত্র বস্তু। সুতরাং উৎপত্তির পূর্ব্বে, কারণের মধ্যে কার্য্যটী থাকে না। কার্য্য বা বিকার-গুলি প্রত্যেকেই একটা একটা স্বতন্ত্র বস্তু।

শঙ্কর ছান্দোগ্য-ভাষ্যে বলিয়াছেন যে,—"আমরা তার্কিকদের মত, একটা বিকারকে অপর একটা বিকারের কারণ বলি না এবং বিকার-গুলিকে কারণ হইতে স্বতন্ত্র বস্তুও বলি না"[‡]। যেটী প্রকৃত কারণ সেটী, ঐ সকল বিকারের মধ্য দিয়াই আত্ম-বিকাশ করিতেছে। সুতরাং ইহাদিগকে কারণ হইতে স্বতন্ত্র বস্তু বলা যাইতে পারে না। কারণটীই,—ঐ সকল বিকাররূপে ক্রমে ক্রমে আপন স্বরূপের পরিচয় দিতেছে। সুতরাং বিকার-গুলিকে কারণ ছাড়া স্বতন্ত্র বস্তু কিরূপে বলিব? লোকে ভুল করিয়া, উহাদিগকে

---

[*] "বহু প্রভূতং স্যাং……প্রজায়েয় 'প্রকর্ষেণ' উৎপদ্যেয।"—ছা° ভা°, ৬।২।২ "বিকার লক্ষণানি তত্ত্বানি……তদ্দ্বারেণাপি ভূমাখ্যং নিরতিশয়ং তত্ত্বং নির্দ্দেক্ষ্যামীতি আরভ্যতে"—৭।১।১। "নামাদি উত্তরোত্তরবিশিষ্টানি তত্ত্বানি, অতিতরাঞ্চ তেষামুৎকৃষ্টতমং ভূমাখ্যং তত্ত্বং"।

[†] "তদেব বহুভবনং প্রয়োজনং নাদ্যাপি নিবৃত্তং"—ইত্যাদি, ছা°, ৬।৩।২ *i. e.* The creation is eternal.

[‡] "যথা সতোঽন্যৎ বস্তন্তরং পরিকল্প্য, পুনস্তস্যৈব প্রাগুৎপত্তেঃ, প্রধ্বংসাচ্চ ঊর্দ্ধমসত্ত্বং ব্রুবতে তার্কিকাঃ, ন তথা অস্মাভিঃ কদাচিৎ ক্বচিদপি সতো 'অন্যৎ' অভিধানমভিধেয়ং বা 'বস্তু' পরিকল্প্যতে"—ছা° ভা°, ৬।২।৩। "সদেবতু সর্ব্বমভিধানম্, অভিধীয়তে চ যদন্যবুদ্ধ্যা"।

হইতে পারে না বলিয়াই, ইহাকে ব্রহ্মেরই "আত্মভূত"[*] বলা হইয়াছে ইহা, ব্রহ্ম-স্বরূপেরই অভিব্যক্তি করিতেছে। সুতরাং জগৎকেও, ব্রহ্মেরই স্বরূপের বিকাশ বলিয়াই গ্রহণ করিতে হইবে[†]। কাজেই, জগৎকে ব্রহ্ম হইতে স্বতন্ত্র স্বাধীন বস্তু বলা অসম্ভব। স্বতন্ত্র বস্তু নহে বলিয়াই ব্রহ্মের অদ্বৈতত্বের কোনই হানি হইতে পারিতেছে না[‡]। পাঠক, একথাটাও লক্ষ্য করিবেন।

জগতের বিকারবর্গ, কার্য্যবর্গ—আমাদের নিকটে দেশ ও কালে বিভক্ত বলিয়া,—একটী অপরটীর বাহিরে, একটী অপরটী হইতে অন্য—এইরূপেই প্রতীত হইয়া থাকে বটে ; কিন্তু ব্রহ্ম হইতে দেশ ও কালে বিভক্ত কোন বস্তু বা বিকার থাকিতে পারে না[§]। কেন না, সকল বস্তু, সকল বিকার, তাঁহার স্বরূপেরই অন্তর্ভুক্ত এবং ইহাদিগকে তাঁহার স্বরূপই ধরিয়া রাখে। কেন না, তাঁহার স্বরূপই এই সকলের মধ্যে আপনাকে বিকাশিত করিতেছে[¶]। সকল বিকারই তাঁহার স্বরূপের অংশ। অংশ—উহার অংশী হইতে স্বতন্ত্র বস্তু হইতে পারে না[‖]। তাই জগতের কোন বিকারকেই তাঁহার স্বরূপ হইতে স্বতন্ত্র মনে করা যায় না। এই জন্য, বিকারগুলিকে ব্রহ্মের "আত্মভূত" বলা হইয়াছে।

কারণের যেটী প্রকৃত 'স্বরূপ' সেটী,—উহা হইতে যে সকল বিকার পর পর-উৎপন্ন হয় সেই গুলির অন্তরালে উপস্থিত থাকিয়া, উহাদের

---

[*] "যৎস্বরূপব্যতিরেকেণ অগ্রহণং যস্য, তস্য "তদাত্মত্বং" দৃষ্টং লোকে" (বৃহ° ভাষ্য, ২।৪।৭)।

এইজন্য, ব্রহ্মের কামনা বা সঙ্কল্পকেও "কামাঃ ব্রহ্মণোঽনন্যাঃ"—'অনন্য', বলা হইয়াছে।

[†] বেদান্তদর্শনে বিকারবর্গকে এই উদ্দেশ্যেই পুনঃ পুনঃ "ব্রহ্ম-লিঙ্গ" বলা হইয়াছে। "যৎ—জগদাকার পরিণামিত্বাদি শ্রূয়তে, তৎ ব্রহ্মদর্শনোপায়ত্বেনৈব বিনিযুজ্যতে,, ইত্যাদি (বেদান্তদর্শন)।

[‡] "স্বতন্ত্রত্বনিষেধেন স্বতঃসত্তা-নিষেধাৎ ন অদ্বৈতশ্রূতিবিরোধঃ"। "ন তু ঐক্যাভিপ্রায়েণ"

[§] "ন হি আত্মনোঽন্যৎ অনাত্মভূতং, তৎ-প্রবিভক্তদেশকালং, সূক্ষ্মং ব্যবহিতং বিপ্রকৃষ্টং ভূতং ভবিষ্যদ্বা বস্তু বিদ্যতে।"

"ব্যাকৃতে চ মূর্ত্তামূর্ত্তশব্দবাচো তে, আত্মনাতু অপ্রবিভক্তদেশকালে ইতি কৃত্বা—'আত্মা'তে অভবদিত্যুচ্যতে"---তৈ° ভাং ২।৬

[¶] "বিশেষাঃ সামান্যে অন্তর্ভুক্তাঃ।" "তদ্ব্যতিরেকেণাভাবভূতা ভবন্তি" (বৃ° ভা°, ২।৪।১১)। সামান্যং হি বিশেষান্ আত্মস্বরূপ-প্রদানেন বিভর্ত্তি—ধারয়তি।"

[‖] "অংশঃ হি অংশিনা একত্ব-প্রত্যয়ার্হোদৃষ্টঃ"—বৃ°, ভা°।

মধ্য দিয়াই, আপন স্বরূপকে ক্রমে ক্রমে অভিব্যক্ত করিতে থাকে। বিকার-গুলির মধ্যে সেই স্বরূপটী আপনাকে হারাইয়া ফেলে না। সুতরাং বিকার-গুলিই যে একটী অপরটীর কারণ, তাহাও হয় না। ব্রহ্মবস্তু, জগতের নাম-রূপাদি বিকার দ্বারাই, আপনাকে ক্রমে ক্রমে প্রকৃষ্ট হইতে প্রকৃষ্টতর-রূপে অভিব্যক্ত করিতেছেন[*]। আজও এই ক্রমাভিব্যক্তির শেষ হয় নাই, উহা এখনও চলিতেছে[†]।

তার্কিকেরা কিন্তু এভাবে কার্য্য-কারণের তত্ত্ব নির্দ্দেশ করেন না। তাঁহারা বর্ত্তমানে উৎপন্ন বিকারকে (ঘটকে), উহার কারণ বা পূর্ব্বাবস্থা হইতে (মৃৎ-পিণ্ড হইতে) একটা সম্পূর্ণ ভিন্ন 'বস্তু' বলিয়া মনে করেন। এবং বলেন যে, উৎপত্তির পূর্ব্বে ত এই বস্তুটা ছিল না; এটা বর্ত্তমানে উৎপন্ন হইল। উৎপন্নের পূর্ব্বে যাহা ছিল, সেটা ত একটা সম্পূর্ণ ভিন্ন বস্তু। ঘটের পূর্ব্বাবস্থা বা কারণ ত—মৃৎ-পিণ্ড। সেই মৃৎ-পিণ্ড হইতে ঘট ত একটা স্বতন্ত্র বস্তু। সুতরাং উৎপত্তির পূর্ব্বে, কারণের মধ্যে কার্য্যটী থাকে না। কার্য্য বা বিকার-গুলি প্রত্যেকেই একটা একটা স্বতন্ত্র বস্তু।

শঙ্কর ছান্দোগ্য-ভাষ্যে বলিয়াছেন যে,—"আমরা তার্কিকদের মত, একটা বিকারকে অপর একটা বিকারের কারণ বলি না এবং বিকার-গুলিকে কারণ হইতে স্বতন্ত্র বস্তুও বলি না"[‡]। যেটী প্রকৃত কারণ সেটী, ঐ সকল বিকারের মধ্য দিয়াই আত্ম-বিকাশ করিতেছে। সুতরাং ইহাদিগকে কারণ হইতে স্বতন্ত্র বস্তু বলা যাইতে পারে না। কারণটাই,—ঐ সকল বিকাররূপে ক্রমে ক্রমে আপন স্বরূপের পরিচয় দিতেছে। সুতরাং বিকার-গুলিকে কারণ ছাড়া স্বতন্ত্র বস্তু কিরূপে বলিব? লোকে ভুল করিয়া, উহাদিগকে

---

[*] "বহু প্রভূতং স্যাং......প্রজায়েয় 'প্রকর্ষেণ' উৎপদ্যেয়।"—ছা° ভা° ৬।২।৩ "বিকার লক্ষণানি তত্ত্বানি......তদ্দ্বারেণাপি ভূমাখ্যং নিরতিশয়ং তত্ত্বং নির্দ্দেক্ষ্যামীতি আরভ্যতে"—৭।১।১। "নামাদি উত্তরোত্তরবিশিষ্টানি তত্ত্বানি, অতিতরাঞ্চ তেষামুৎকৃষ্টতমং ভূমাখ্যং তত্ত্বং"।

[†] "তদেব বহুভবনং প্রয়োজনং নাদ্যাপি নিবৃত্তং"—ইত্যাদি, ছা°, ৬।৩।২ i.e. The creation is eternal.

[‡] "যথা সতোঽন্যৎ বস্তন্তরং পরিকল্প্য পুনস্তস্যৈব প্রাগুৎপত্তেঃ, প্রধ্বংসাচ্চ ঊর্দ্ধমসত্ত্বং ব্রুবতে তার্কিকাঃ, ন তথা অস্মাভিঃ কদাচিৎ কচিদপি সতো 'ঽন্যৎ' অভিধানমভিধেয়ং বা 'বস্তু' পরিকল্প্যতে"—ছা° ভা, ৬।২।১। 'সদেব তু সর্বমভিধানম্, অভিধীয়তে চ যদন্যবুদ্ধ্যা'।

কারণ-ছাড়া অন্য বস্তু বলিয়া মনে করে, অন্য নামে ব্যবহার করে. ঘট-শরাবাদিকে মৃত্তিকা না বলিয়া, লোকে ভুল করিয়া উহাদিগকে ঘট-শরাবাদি নামে ব্যবহার করিয়া থাকে। এটা একটা মস্ত ভুল। ঘট-শরাবাদি প্রকৃত-পক্ষে, মৃত্তিকার স্বরূপেরই ক্রমাভিব্যক্তি। উহারা অন্য কোন বস্তু নহে[*]। ঘট-শরাবাদি রূপে পরিণতিই ত মৃত্তিকার একমাত্র প্রয়োজন। এই প্রয়োজন-সিদ্ধির জন্যই ত কুম্ভকার মৃত্তিকা সংগ্রহ করিয়াছিল। এই উদ্দেশ্যই ত, মৃত্তিকাকে ক্রমে ক্রমে নানা আকারের মধ্য দিয়া লইয়া যাইতেছে। ঘট-শরাব-রূপে অভিব্যক্ত হইলেই মৃত্তিকার শেষ-উদ্দেশ্য সিদ্ধ হয় ;—আপন প্রয়োজন পূর্ণতা লাভ করে[†]।

মৃত্তিকাই—আপন-স্বরূপকে ঘট-শরাবাদি-রূপে বিকাশিত করিয়া থাকে। সুতরাং উহারা মৃত্তিকা-ছাড়া এক একটা স্বতন্ত্র বস্তু হইবে কিরূপে? তত্ত্বদর্শীরা বুঝিতে পারেন যে, মৃত্তিকারই স্বরূপটী—ঘট-শরাবাদি-রূপে ফুটিয়া বাহির হইতেছে। ব্রহ্মেরই স্বরূপটী, তদ্রূপ, জগতের বিকারবর্গের আকারে —বিকার-বর্গের মধ্যদিয়াই—ক্রমে ক্রমে ফুটিয়া বাহির হইতেছে এবং চরমে মনুষ্যাদি-উন্নত জীবের জ্ঞান-শক্তি-সৌন্দর্য্যের মধ্যেই ভগবৎ-স্বরূপ পূর্ণ অভিব্যক্ত হইবে। কিন্তু সে স্বরূপকে নিঃশেষ করা অসম্ভব।

সুতরাং বিকারবর্গকে কারণ হইতে স্বতন্ত্র করিয়া লওয়া যায় না। সুতরাং শঙ্কর-মতে, বিকার-গুলিকে অসত্য, অলীক বলাও অসম্ভব। এই জন্যই বেদান্তে, কার্য্যকে কারণ হইতে 'অনন্য' বলিয়া সিদ্ধান্ত করিতে হইয়াছে ;— 'আত্মভূত' বলিতে হইয়াছে।

শ্রীকোকিলেশ্বর শাস্ত্রী,
বিদ্যারত্ন, এম-এ।

(ক্রমশঃ)

---

[*] "যথা রজ্জুরেব সর্পবুদ্ধ্যা সর্পইত্যভিধীয়তে, যথা বা পিণ্ডঘটাদি মৃদোঽন্যবুদ্ধ্যা পিণ্ড-ঘটাদিশব্দেন অভিধীয়তে লোকে। রজ্জুবিবেক-দর্শিনান্তু সর্পাভিধানবুদ্ধী নিবর্ত্তেতে, যথা চ মৃদ্বিবেকদর্শিনাং ঘটাদি-শব্দবুদ্ধী। তদ্বৎ সদ্বিবেকদর্শিনাং 'অন্য'-বিকার-শব্দবুদ্ধী নিবর্ত্তেতে"—ছা°, ৬।২।৩।

[†] "প্রাগুৎপত্তেঃ স্বেন হি ভবিষ্যদ্রূপেণ ঘটো বর্ত্ততে।……অনাগতার্থি-প্রবৃত্তেশ্চ ; নহি অসতী অর্থিতয়া প্রবৃত্তির্লোকে দৃষ্টা। অসংশ্চেৎ ভবিষ্যদ্ঘটঃ, ঐশ্বরং ভবিষ্যদ্ঘটবিষয়ং প্রত্যক্ষজ্ঞানং মিথ্যা স্যাৎ। তস্মাৎ প্রাগুৎপত্তেরপি সদেব কার্য্যং……এবঞ্চ সতি, ঘটস্য প্রাগভাব ইতি—ন ঘটস্বরূপমেব প্রাগুৎপত্তেনাস্তীতি"—বৃ° ভা°, ১।২।১